

## **An Investigation into Students' Leadership Skills for Promoting Academic Achievements of Secondary Schools Students**

**Mian Said Hussain**

[hmainsaid@uswat.edu.pk](mailto:hmainsaid@uswat.edu.pk)

PhD Scholar, Department of Education and Staff Training, University of Swat

**Dr. Farooq Nawaz Khan**

[farooqlit76@gmail.com](mailto:farooqlit76@gmail.com)

Associate Professor, Department of Education and Staff Training, University of Swat

**Laiba Gul**

[laibagul5644@gmail.com](mailto:laibagul5644@gmail.com)

Student of BS-Sociology, Department of Social and Gender Studies, University of Swat

**Corresponding Author: Dr. Farooq Nawaz Khan** [farooqlit76@gmail.com](mailto:farooqlit76@gmail.com)

**Received:** 03-02-2026

**Revised:** 18-02-2026

**Accepted:** 05-03-2026

**Published:** 19-03-2026

### **ABSTRACT**

*Secondary education aims to develop students' communication, critical thinking, problem-solving and leadership skills that ultimately result in their successful academic and professional endeavors. Students' leadership helps them to develop collaboration in learning. Hence, the study aims at analyzing the students' leadership skills in promoting their academic achievement at secondary school level. The present research was an experimental study of one school located in Charbagh district of Swat in the public sector secondary school of the study area. A pre and post-test pre-experimental research design was used. The number of secondary level students in the study was 40. Data was collected using a developed, validated and reliable Likert questionnaire that was pilot-tested to create items related to students' leadership and students' academic achievement. Pre-test was given and then intervention was provided for students' leadership. A post-test was given at the end of the intervention. Paired sample t-test which enabled the comparison of the difference of means among the students' performance in the pre and posttests was used in the analysis of the data. Large differences were obtained between the pre- and post-test mean values with the paired sample t-test. A correlation between the pre- and post-mean values as well as the p-value for leadership skills in the post-test was  $p < .0001$  and that of academic achievement was  $p < .001$  which was very small. It concluded that the intervention worked well and with the improvement in leadership skills among students, their academic learning skills were promoted as well. It found that the changes were not random but because of the intervention that led to the improvement in students' leadership skills which consequently led to the improvement in academic learning skills. Elementary and secondary schools and administration must incorporate structured leadership development training based on projects for the enhancement of academic skills of students.*

**Keywords:** *Students' Leadership Skills, Academic Achievements, learning Skills Secondary Level, Quantitative, Pre-Experimental*

### **INTRODUCTION**

Students are active learners who are formally enrolled in educational institutions and are engaged in learning activities to gain knowledge, skills, values, and competencies for personal, academic and professional growth. Students are not just the recipients of learning, but active creators of learning experiences, engaging in collaborative learning activities, critical thinking and leadership skills in learning

communities. Today's educational ideologies focus on the student as an active agent of positive social and institutional transformation and a self-directed learner (Headrick, 2024; Ueda & Kezar, 2024).

Students are seen as "potential leaders" whose educational experiences offer opportunities to build their interpersonal, organizational, and decision-making skills that can lead to academic success and future success. As an active partner in the transformation of the educational landscape and in the community, students are more recognized as a partner in higher education than merely a student as an object of learning (Kroll et al., 2024). (Wiley Online Library)

### **Leadership Skills**

Leadership Skills are the collection of interpersonal, cognitive, behavioral, and managerial abilities that help individuals guide, inspire and influence other people to attain common objectives and bring about positive change. They involve effective communication, teamwork, problem-solving, decision making, self-management, emotional intelligence, critical thinking, conflict resolution, organization and ethical responsibility (Kroll et al., 2024).

In the school environment, students' leadership skills can be enhanced through formal leadership programs, school involvement, school-based activities, group learning and community service. In recent years, leadership has been defined as a process that relies on more than just authority; it is relational and values based, and involves working with others, being inclusive, empowering others, and practicing social responsibility (Ueda & Kezar, 2024).

Other studies also suggest that leadership abilities in students can be various such as organization and planning, diversity awareness, self-confidence, interpersonal communication, technological proficiency, critical analysis, problem solving, decision making etc. These skills have a great impact on students' academic achievement, personal development and future job performance (Letić Lungulov & Radujkov, 2024). In addition, good leadership has a positive impact on students' self-regulated learning, which makes them more motivated, responsible, resilient and engaged in learning, resulting in improved academic performance (Bhuttah et al., 2024). (Nature)

### **Academic Achievement**

Academic achievement is the degree to which students achieve learning outcomes and educational goals, and receive academic credentials, accomplishments, and standards set by educational institutions. It is usually determined by grades, grade point average (GPA), standardized test scores, classroom performance, examination scores, and knowledge, skills, and competency in a given area of study. Academic achievement is the product as well as the process of learning, and is a manifestation of students' cognitive development, motivation, self-regulation and involvement in learning activities (Zhao et al., 2024).

In contemporary educational research, academic achievement is regarded as a multi-faceted phenomenon that consists of, but is not restricted to, exam results, and such skills as critical thinking, problem-solving, creativity, communication competence, collaborative learning, and capacity for lifelong learning. Current viewpoints have focused on the importance of multiple factors in achieving academic success, such as self-efficacy, motivation, leadership abilities, family support, instruction quality, and school climate (Bhuttah et al., 2024).

Educational psychology states that academic achievement is the outcome of what learners have learned, their attitudes toward learning, and their skills. This is a crucial measure of learning and student growth. The assessment of achievement outcomes is generally measured objectively with standardized tests and

subjectively with teacher observation of their students' classroom participation and performance in projects (Peng et al., 2025).

Recent literature has shown that the self-management and self-regulation skills of students are closely related to academic achievement. Individuals who are able to plan and organize their time, set learning objectives, track progress, and have confidence in their learning ability are likely to perform better in educational environments. Self-efficacy is also found as a key mediator between self-management behaviors and academic achievement (Zhao et al., 2024). Likewise, students' success in academic achievement is positively associated with emotional intelligence, resilience and leadership skills, as these boost their motivation, persistence and involvement in shared learning activities.

In addition to the academic context, there are also more general factors from a sociocultural point of view that affect academic achievement such as family socio-economic status, cultural values, peer relationships, institutional support and educational leadership. Karadağ and Sertel (2025) maintain that educational leadership has significant impacts on students' learning achievement, especially in collectivist societies where cooperation and communication between people play an important role in the learning process. This view argues that learning outcomes are not just a reflection of the individual student's performance, but also a result of relational and dynamic processes between learners, teachers, education institutions and communities.

The notion of academic achievement has also changed due to the requirements of the twenty-first century in education. The 21st century education systems have identified the following skills as essential in successful learning: critical thinking, creativity, communication, collaboration, digital literacy, and leadership. In recent years, academic success is seen in terms of holistic development that provides students with the competencies they need to take on their future roles professionally, civically and socially (Ueda & Kezar, 2024).

In the realm of higher education, academic success includes the skills of applying theoretical knowledge in practical situations, independent learning, cooperative learning, and exhibiting ethical and professional attributes. Universities around the world are thus encouraging the shift towards student-centered pedagogies that foster active learning, leadership development, critical reflection and community engagement as ways to improve academic performance and overall educational quality (Bhuttah et al., 2024).

Academic achievement for the present study is defined as successful achievement of educational goals as evidenced by students' academic performance, as measured by grade, scores on academic assessments, classroom participation and cognitive and non-cognitive skills. It is regarded as a result of several factors such as the leadership ability of students, their motivation, their self-efficacy, communication, problem-solving and academic learning.

### **Curriculum for Developed Students' Leadership Skills and Academic Achievement in Secondary Education**

The role of leadership in the promotion of academic achievement among secondary school students crucially involves developing self-regulation, motivation, communication, collaboration skills, problem solving and emotional intelligence. It is also acknowledged by contemporary educational research that training future leaders is not the only value of leadership training; it is also valuable for enhancing students' academic performance and their whole person development. Student leadership experiences offer opportunities for students to take responsibility, be actively involved in school experiences and build skills that have a positive impact on their learning (Aquino & San Luis, 2025). (ResearchGate)

Secondary school academic performance goes beyond just the students' examination results, as it refers to the students' cognitive development, critical thinking, classroom participation, problem solving, and successful achievement of the learning objectives. Leadership skills play an important role in these dimensions by enhancing students' ability to take charge of their own learning, to learn and work together with other students, and to stay motivated to achieve learning targets. This research shows that students who have engaged in leadership activities tend to have higher academic engagement, better self-confidence, and educational performance than students who have not engaged in leadership activities (Pansacala et al., 2024). (IJSMS Journal)

### **Establishment of self-regulation and self-management skills**

In promoting academic achievement, one of the main ways that leadership skills fosters is the development of competencies of self-regulation and self-management. Student leaders must frequently, plan activities, manage time, and balance multiple responsibilities, and prioritize them. The experiences develop discipline, responsibility, goal-setting behaviors that are directly applicable to academic tasks.

Self-regulated learners have increased control over their own learning processes: they monitor their learning progress, evaluate themselves and adjust their strategy as required. Leadership experiences inspire pupils to be independent learners, accountable for their learning. In recent years, several studies have found a significant correlation between self-leadership and self-management and students' academic achievements due to their motivational, perseverative, and goal achievement confidence (Zhao et al., 2024; Riaz et al., 2023).

The leadership skills help secondary school students to cope effectively with homework assignments; prepare for tests and examinations; and are active learners in the classroom. They can establish clear objectives and do things in an organized manner that leads to positive academic outcomes and success in education.

### **Increase in motivation and engagement with learning**

Leadership also fosters a student's intrinsic motivation and involvement in academic pursuits, thereby contributing to academic success. Student leaders may become more motivated to excel at personal performance as they take on roles that involve accountability and commitment, and act as role models for other students. Leadership experiences help to build purpose and belonging, motivating students to put more effort into their learning experiences.

Aquino and San Luis (2025) found that there was a positive correlation between leadership involvement and academic performance, stating that students who experience leadership are more motivated to excel academically, confident and determined to succeed academically. Students' leaders are more likely to persist in their attempts to deal with educational difficulties and display high levels of commitment to meeting their academic goals. (ResearchGate)

In addition, students are more active in class discussions, work more efficiently on assignments, and seek ways for improvement in their learning. Their leadership experiences foster good attitudes towards learning which help to enhance the educational outcomes of the secondary school level.

### **Enhancing Communication Skills**

Communication skills are among the most crucial leadership skills that lead to student success. Student leaders in secondary schools regularly make speeches, work as a team, negotiate, make presentations and

interact with others in the public arena. These experiences build the skills of verbal and written communication needed for academic achievement.

Students who have good communication skills are able to communicate their thoughts more effectively, engage confidently in conversation with teachers and classmates, work well in groups, and develop positive relationships with peers and teachers. The ability to communicate well also helps students to engage in learning and critical thinking, which deepens their understanding of academic concepts and enhances their performance in tests.

Based on empirical findings, it can be assumed that leadership experiences enable students to cultivate superior communication and networking skills that, in turn, will help them successfully overcome academic difficulties and thus support the improvement of their educational performance (Aquino & San Luis, 2025). (IJERE)

### **The development of Critical Thinking and Problem Solving skills**

Leadership experiences offer the students an opportunity to cultivate critical thinking and problem solving skills that are essential factors in determining students' academic success. Student leaders are faced with situations for analysis, decision making, conflict resolution and strategic planning on regular basis. These experiences promote higher order thinking skills which are clearly related to classroom learning and academic achievement.

Students use critical thinking to identify and analyze information, to develop informed ideas and arguments, and to draw on knowledge in authentic situations. Problem-solving skills enable learners to solve academic problems systematically and creatively. The students of secondary school who have leadership capabilities are likely to be successful in the subjects that involve analytical thinking and independent thinking.

Recent research shows that leadership training programs positively affect students' critical thinking skills and learning outcomes. Student involvement in decision-making processes, students' collaborative learning and inclusive leadership practices have been related to improved academic achievement and intellectual development in students (Nagaraj, 2008; Bhuttah et al., 2024). The conclusions drawn from these findings indicate that the competencies of the leader are related to academic achievement in terms of achieving a deeper level of cognition and reflective learning practices.

### **Foster partnerships and group work**

Collaborative learning is an important part of academic achievement in secondary school and can be enhanced by leadership skills. Student leaders frequently organize group activities, foster involvement of other students, and encourage cooperative problem-solving. This kind of experiences enable the learners to value other viewpoints, handle interpersonal relationships, and collaborate successfully with others on shared educational objectives.

Cooperative learning groups promote the sharing of knowledge, mutual support, and shared accountability for learning. Students who demonstrate leadership skills are able to lead, resolve conflict, and promote inclusive involvement in learning communities. These skills enhance group and individual performance in an educational environment.

Study findings show that leadership activities significantly improve students' interpersonal relationships and teamwork skills, thereby positively affecting academic engagement and achievement. Social

development, emotional wellness, and a greater motivation for learning are also achieved through collaborative experiences (Pansacala et al., 2024). (IJSMS Journal)

### **Building Self Efficacy and Confidence**

Leadership behaviors also stimulate academic success by means of another mechanism, namely, self-efficacy, which are people's beliefs about their ability to perform specific tasks. Strengthening students' confidence through leadership experiences to ensure opportunities for success, responsibility and personal growth. Successful performance of leadership roles leads to increased self-confidence that students have the skills to tackle problems and meet educational objectives.

Students who have high self-efficacy tend to persist, have resilience and are more motivated to learn academically. Students who are confident feel abler to engage in higher order learning tasks, to ask for help if necessary, and to take part in classroom activities. The positive psychologies that are fostered through leadership experiences enhance academic performance.

Exposure to leadership has been found across secondary and postsecondary education to have a positive impact on students' self-efficacy, which in turn positively influences students' academic achievement and educational outcomes (Brown, 2025). (West Chester University Digital Commons)

### **Emotional Intelligence development**

Emotional intelligence is a fundamental leadership determinant which contributes positively for secondary school students' success in their academic performance. In the realm of emotional intelligence, self-awareness, empathy, emotional regulation, social skills, and effective relationship management are key factors. These qualities in students enhance their ability to cope with academic demands, foster positive relationships, and thrive in the learning environment.

Leadership activities give students opportunities to demonstrate empathy, to be attuned to people's views and to respond constructively in interpersonal conflict situations. All of these experiences help children develop emotionally and emotionally resilient and therefore are associated with academic achievement and emotional well-being. EI students will have increased motivation, ability to cooperate, and to stay on track with their educational goals.

Emotional intelligence and the link to academic performance indicates that leadership development programs should focus on developing social-emotional learning in addition to academic learning. It is an integration which encourages students' learning outcomes and all-round development in Secondary Schools.

### **Encouraging responsibility and accountability**

Through skills leaders-students take responsibility and show accountability for their actions, behaviours and learning. Student Leaders know how their behaviour affects others and they aim to be disciplined, committed and behave ethically. This is also an attitude of responsibility in studying such as attending to the class, doing homework, and taking exams.

When students are held accountable, they get used to being hard workers and to never give up both of which are necessary for learning success. If students in secondary schools acquire leadership skills they are able to take challenges, discharge responsibilities and seek excellence in their learning process. All these attributes are hugely significant in further learning and lifelong learning.



Research has shown that leadership experiences help develop organizational skills, self-discipline and responsibility, which are key factors linked to adolescent success in school (Aquino & San Luis, 2025). (ResearchGate)

### **Theoretical Perspectives Explaining the Relationship**

It helps to understand how leadership skills contribute to academic success by means of Social Cognitive Theory (SCT). Bandura states that learning is a process that involves personal factors, environmental factors, and behaviors. Leadership experiences boost students' self-efficacy, observation learning and selfregulatory skills, which in turn lead to better academic performance.

The Transformational Leadership Theory also accounts for this relationship through the lens of the four components of motivation, inspiration, intellectual stimulation and individualized support. The students that acquire the characteristics of the Transformational Leaders are more involved in learning, engage in collaborative problem solving, and have higher expectations of achieving academic success. Such attributes foster better learning and growth.

Self-Determination Theory also proposes that the leadership experiences students have fulfill their needs for autonomy, competence, and relatedness, enhancing students' intrinsic motivation and engagement in academic pursuits. Increased academic achievement is fostered more likely if students feel they are capable of being a leader. Increased academic achievement more likely if students feel they are capable of being a leader.

### **Statement of the Problem**

There are experiential data that supports the positive impacts of student-led achievements and learning; this indicates that the development of students' leadership skills is necessary to strengthen learning outcomes (Stevenson et al., 2003). Moreover, values of modern pedagogy which are student leadership and constructive learning procedure to enhance the academic performance of secondary students have been highlighted in the National Education Policy [NEP] (2009). Therefore, the study was intended to fill this gap by assessing leadership skills possessed by students and its part played by students in promoting their academic achievements at the secondary level of education.

### **Objectives of the study**

The following are the aims of the research:

1. To explore students' leadership capabilities at secondary school.
2. To find out the current level of students' academic achievements at secondary school level.
3. To measure the impact of students' leadership skills on the academic achievements of secondary schools' students.

### **METHODOLOGY**

The researcher used a one- group pre- and post-tests experimental research design which was quantitative and experimental. 40 students of grade 10th from Government Higher Secondary School Charbagh, District Swat, Khyber Pakhtunkhwa, Pakistan participated in the study. A pre-test was used to test students before treatment was given while a post-test was used at the end to test the students. The collected data was

analysed using paired sample t-test to determine the differences in students' performance between pre- and post-test. Proper permission from the head of the institution and consent of students were obtained. Confidentiality of data was ensured and sources acknowledged.

## RESULTS

Paired Sample T-Test measurement from Pre- to Post-tests related to Students Leadership Skills (SLSpre and SLSpo) will be used at the first step for inferential statistics.

**Table 1: Pre- and post-measurement of students' leadership skills (SLSpre, SLSpo)**

|        |        | Mean   | N  | Std. Deviation | Std. Error Mean |
|--------|--------|--------|----|----------------|-----------------|
| Pair 1 | SLSpre | 32.875 | 40 | 4.16449        | 0.65846         |
|        | SLSpo  | 61.125 | 40 | 2.95425        | 0.46711         |

Mean scores before and after intervention were 32.88 and 61.13, respectively, showing that there was a significant improvement in the mean scores post intervention. While SD before and after intervention was 4.16 and 2.95, lower value after intervention means similar responses. Before and after intervention (pre and post) Std. Error Mean were 0.66 and 0.47, respectively. The accuracy of values, and the researchers' confidence, is indicated by lower value after intervention (see Table 1).

**Table 2 correlation of student's leadership skills pre and post intervention shows that there was no high correlation between students' leadership skills before and after the intervention.**

## CORRELATIONS

|        |                | N  | Correlation | Sig.  |
|--------|----------------|----|-------------|-------|
| Pair 1 | SLSpre & SLSpo | 40 | 0.189       | 0.243 |

The correlation value is 0.189 before the intervention and 0.189 after the intervention, indicating a very low correlation between the before and after intervention scores. There has been a significant impact of the intervention, and scores have gone up greatly. A significance (sig.) value less than 0.05 (i.e. < 0.243) was considered statistically significant. There was no strong relationship in the scores of SLSpre and SLSpo and intervention has influenced the change in score (see Table 2).

**Table 3: Statistical significance of the difference between the score before (SLSpre and after intervention (SLSpo)**

| Mean   | SD   | Std. Error Mean | Confidence Interval of the Difference (95%) |        | T-Value | df | Sig. (2-tailed) |
|--------|------|-----------------|---------------------------------------------|--------|---------|----|-----------------|
| -28.25 | 4.62 | 0.73183         | Lower                                       | Upper  |         |    |                 |
|        |      |                 | -29.73                                      | -26.76 | -38.6   | 39 | <.0001          |

The mean score difference before and after the intervention was 28.25 indicating that the mean score after intervention was higher than before by 28.25. The SD value of 4.62 shows that most of the members also helped to improve with a little difference. The smaller the SD error, 0.73, the more accurate and confident the researcher will be. The interval of the difference between -29.73(lower) and -26.76 (upper) was a real difference. The t-value statistics was significant and negative: -38.60. The mean difference was significant



and large (as shown in Table 3). Sig. value (2-tailed) ( $p$  value  $< 0.05 = 0.0001$ ) meant that the difference was more significant and the improvement was not a random process, but rather was real.

**To present the difference between pre- and post-test, a pair sample effect size and its interpretation are presented in table 4.**

#### Effect Sizes

|        |                |                    | Standardizer <sup>a</sup> | Point Estimate | Confidence Interval (95%) |        |
|--------|----------------|--------------------|---------------------------|----------------|---------------------------|--------|
|        |                |                    |                           |                | Lower                     | Upper  |
| Pair 1 | SLSpre - SLSpo | Cohen's d          | 4.62851                   | -6.103         | -7.484                    | -4.716 |
|        |                | Hedges' correction | 4.67361                   | -6.045         | -7.412                    | -4.671 |

Cohen's  $d = 4.62$ ; Hedges'  $g = 4.67$  for effect size of pre and posttest sample. Both of these values indicate very large effect size, typically  $d > 0.8$  is great. Confidence interval also falls in the range of true effect size, i.e., 95%, for Cohen's  $d = (-7.48, -4.71)$  and Hedges'  $g = (-7.41, -4.67)$ . They are not involving 0, it is therefore statistically significant and real effect size. It indicates that the effect size was extremely large, and that the intervention had a large and very significant impact on the post-test values. Thus, the differences in post-test values were not only statistically significant, but also meaningful (refer to Table 4).

#### Pre- and Post-tests on the Measure of SACpre and SACpo (Inferential Statistics)

**Table 5: Paired samples statistics of the same group on the measure, the ability of students' Academic achievement before (SACpre) and after (SACpo) intervention.**

| Paired Samples Statistics |        |       |    |                |                 |
|---------------------------|--------|-------|----|----------------|-----------------|
|                           |        | Mean  | N  | Std. Deviation | Std. Error Mean |
| Pair 1                    | SACpre | 40.57 | 40 | 4.73334        | 0.74841         |
|                           | SACpo  | 62.95 | 40 | 3.56586        | 0.56381         |

The mean score before and after intervention was 40.57 and 62.95 showing a large increase in scores after intervention. SD for SACpre was 4.73 and SACpo is 3.56. If it is lower after intervention, similar responses. The SD error was 0.56 for SACpo which was accurate and the intervention was meaningful and impactful (as shown in Table 5).

**Table 6: Pre- and Post- intervention correlation between student's attitude towards academic achievement**

| Correlations |                  |    |             |       |
|--------------|------------------|----|-------------|-------|
|              |                  | N  | Correlation | Sig.  |
| Pair 1       | SACpre and SACpo | 40 | 0.143       | 0.379 |

The very low correlation value of 0.143 indicates a very weak positive correlation between the two scores, SACpre and SACpo, and the significant increase in the score. If the sig. value is greater than 0.05 (i.e 0.379) there is no significant correlation between the scores of SACpre and SACpo and thus no significant influence of the intervention for SLS on the score change (see Table 6).

The statistical significance of the difference between score prior to intervention (SACpre) and score after intervention (SACpo) is shown in table 7.

| DIFFERENCES |                |        |     |               |                                             |        |         |    |                 |
|-------------|----------------|--------|-----|---------------|---------------------------------------------|--------|---------|----|-----------------|
|             |                | Mean   | SD  | SD Error Mean | Confidence Interval of the Difference (95%) |        | T-value | df | Sig. (2-tailed) |
|             |                |        |     |               | Lower                                       | Upper  |         |    |                 |
| Pair 1      | SACpre - SACpo | -22.37 | 5.5 | 0.87          | -24.13                                      | -20.61 | -25.71  | 39 | <.001           |

A very large difference in mean score of (SACpre) and (SACpo) values was -22.37 while the absolute value of 22.37 indicated a significant difference. Similar improvement was shown with the SD value (5.50) with slight differences between individuals. The SD error mean (870) shows the precision of the difference and confidence of the researcher in the estimate of the mean difference was 22.37 (see Table 7).

The interval of the difference [-24.13 (lower) and -20.61 (upper)] indicated the score of SACpo was consistently higher than SACpre which is a real difference. The t-value statistics is -25.71, a bigger negative number. Thus, this difference was significant and substantial.

If the difference was statistically significant, Sig. value (2-tailed) (p-value < 0.05, i.e.  $p < 0.001$ ) was listed. Therefore, improvement was real and due to intervention and not by random chance.

**Table 8: Effect size and its interpretation to present difference between pre- and post-tests values regarding the ability of student academic achievements as a result of intervention (acquiring leadership skills related to students).**

| Effect Sizes |                |                    |                           |                |                           |        |
|--------------|----------------|--------------------|---------------------------|----------------|---------------------------|--------|
|              |                |                    | Standardizer <sup>a</sup> | Point Estimate | Confidence Interval (95%) |        |
|              |                |                    |                           |                | Lower                     | Upper  |
| Pair 1       | SACpre - SACpo | Cohen's d          | 5.50379                   | -4.065         | -5.012                    | -3.111 |
|              |                | Hedges' correction | 5.55742                   | -4.026         | -4.964                    | -3.081 |

Effect size is a measure of the magnitude/ effectiveness of the difference between pre and post test samples. SACpre and SACpo resulted in standardized values for the two effect sizes as Cohen's  $d = 5.50$  and Hedges'  $g = 5.55$ . The two numbers are very large,  $d > 0.8$ . The 95% confidence interval was also within the "true range" of effect size. The effect size was statistically significant and real for Cohen's  $d = (-5.01, -3.11)$  and Hedges'  $g = (-4.96, -3.08)$  as they did not contain 0. The absolute value represents a very large positive impact of the intervention (refer to Table 8).

## DISCUSSION

This study used pretest and posttest experimental design to assess the effectiveness of an educational program to improve students' leadership capacity and their academic achievement. The results showed that there were statistically significant gains in students' leadership after the intervention as well as statistically significant gains in students' academic performance. The findings indicate that the leadership development programs can be effective tools in achieving academic success of secondary school students through the development of self-regulation, communication, collaboration, critical thinking, and motivation.

### **Enhanced Students' Leadership Skills**

Table 1–4 shows that substantial gains were found for students' leadership skills following the intervention. The mean score was higher after the intervention as compared to the pre-test, which shows that the intervention improved students' leadership competencies. The decrease of the standard deviation from 4.16 to 2.95 also indicates that students had similar reactions to the intervention and achieved relatively similar scores on the leadership skills after the intervention.

This paired-sample t-test resulted in a highly significant t value,  $t(39) = -38.60$ ,  $p < .0001$ , proving that the improvements were not due to chance. Furthermore, the very high effect sizes (Cohen's  $d = 4.62$ ; Hedges'  $g = 4.67$ ) suggest that the intervention was particularly large in terms of practical significance, in terms of students' leadership development. The values found in this study are extremely high effects on education, with values over 0.80 classified as large, according to the conventional interpretation.

This is in line with recent literature that emphasizes the need for leadership development programs to help enhance students' personal and educational outcomes. According to Aquino and San Luis (2025), student leadership experiences have a significant influence on improving student organizational skills, student responsibility, student communication skills and student academic motivation, which are in turn related to improving educational performance. Ueda and Kezar (2024), in their systematic review of formal leadership programs, found that structured leadership programs lead to improved students' self-efficacy, interpersonal competence and involvement in learning activities.

The slightly positive, but not statistically significant, correlation between pre-test leadership score and post-test leadership score ( $r = .189$ ,  $p = .243$ ) also indicates that the intervention was effective in making meaningful changes, which affected students' original leadership profiles. The low correlation is evidence that the students were not simply continuing to perform at the same level as before, but were acquiring new skills and behaviors from the intervention. This finding provides support for the effectiveness of experiential and academic learning methods in developing leadership abilities of adolescents.

Theoretically, the findings are consistent with the Social Cognitive Theory which states that learning takes place when behavior, beliefs, and experiences interact in the environment. Students learn to observe, practice and internalize leadership behaviours, building their sense of self-efficacy and self-regulation, which are key factors in leadership development and academic success (Bandura, 1986). Students who feel that they are good leaders are more likely to be active in school activities, take responsibility and be persistent in reaching their goals.

The improvements observed can also be explained using Transformational Leadership Theory. Collaborative, inspiring, intellectual stimulating, and shared responsibility leadership activities facilitate students' higher order thinking abilities and positive educational attitudes. Empirical evidence has been found recently that transformational leadership experiences improve the generic competencies of students, their communication skills and their skills in lifelong learning (Peng et al., 2025). Thus, the significant results of the leadership scores in this study could be due to the successful implementation of educational practices that develop students' transformational leadership abilities at secondary schools.

### **Leadership Development in the context of Academic Achievement**

The results reported for academic achievement in Tables 5–8 show that the intervention had a significant effect on students' academic achievement. The average gain in scores from the pre-test to post-test was 22.37 points, with a mean score of 40.57 points on the pre-test and 62.95 points on the post-test. This is a

significant rise and indicates that leadership development activities had positive impact on pupils' learning outcomes and attitude towards their education.

The decrease in standard deviation from 4.73 to 3.56 suggests that students' academic improvements were more evenly distributed after the intervention. Similarly, the more precise and reliable degree of academic growth realized is suggested by the lower SEM of the post test. Together, these results suggest that the intervention was effective for the entire sample and not just a sub-sample of students.

The paired-samples t-test revealed that the academic scores for pre-test and post-test were significantly different,  $t(39) = -25.71$ ,  $p < .001$ . Furthermore, the extremely high effect sizes (Cohen's  $d = 5.50$ ; Hedges'  $g = 5.55$ ) indicate that the intervention was not only statistically significant but also educationally significant. These effect sizes are much larger than typical thresholds for large effects and represent compelling evidence of the pedagogical value of leadership-based intervention experiences.

There was no significant correlation between academic achievement scores pre and post the intervention ( $r = .143$ ,  $p = .379$ ), indicating that the changes in academic achievement observed were likely due to the intervention, and not due to how students were pre-taped. The intervention seems to have impacted students' learning processes, motivations, and involvement in learning, resulting in meaningful gains in their academic performance.

The results have implications for current research that illustrates that student leadership skills are positively correlated with academic success. Aquino and San Luis (2025) determined that there was a high positive correlation between leadership involvement and academic performance, suggesting that leadership experiences promote self-discipline, organizational competence and motivation, which are all associated with education success. Similarly, Bozkuş (2026) found that student leadership competencies have positive correlation with students' performance in diverse educational contexts based on PISA 2022 results.

### **Leadership Skills as Mechanisms for Academic Success: A Case Study of a Secondary School in the Windward District of Oahu, Hawaii**

The findings of the substantial gains in academic performance found in this study could be attributed to various mechanisms related to leadership development. First, students' self-regulation and self-management abilities are promoted through good leadership. Student leaders usually improve their time management, goal setting, and personal responsibility, which helps them to better organize their schoolwork. SRLs watch themselves and assess their learning, and make adjustments as needed to reach specified learning goals, which leads to better academic results.

According to the latest study conducted by Zhao et al., (2024), self-management has a significant effect on academic performance as a mediator variable of self-efficacy. Pupils' confidence in their abilities is boosted through leadership experiences and as a result they are more likely to push on and persevere when they encounter obstacles in their learning. Therefore, the development of leadership may indirectly influence educational outcomes in terms of the development of effective self-regulatory behaviors.

Secondly, leadership development improves the communication and collaborative learning skills. Developing leadership skills help students to be more involved in classroom discussions, articulate ideas, and collaborate with others. Co-operative learning promotes knowledge sharing, reflection and problem solving, which leads to better academic performance. The present findings align with those of Bhuttah et al. (2024) that inclusive leadership practices have a significant positive impact on students' critical thinking skills and learning outcomes in higher education environments, thereby indicating its positive influence on learning within higher education institutions.

Thirdly, leadership experiences enhance students' motivation and engagement in education. Students are motivated to take more responsibility, hold themselves responsible and strive for excellence when promoted to leadership roles. According to Self-Determination Theory, opportunities for autonomy, competence, and relatedness are beneficial for increased intrinsic motivation and educational engagement. Leadership interventions meet these psychological needs by fostering student involvement in decision-making and enabling them to take on meaningful responsibilities in their learning contexts.

### **Implications for Secondary Education**

This research implies significance for the practice of education in the light of secondary school level. To sum up, the significant enhancements in leadership abilities and learning outcomes suggest that leadership development programs need to be incorporated in school curricula and extracurricular activities. Educational institutions should create opportunities for students to engage in collaborative projects, leadership development, student governance and student peer mentoring, which will help to build the life skills needed for student success.

Student leadership is also supported by teachers, who help them develop it. Creating active, participatory, co-decision making, collaborative and problem-solving classroom environments can help develop students' leadership skills and learning. A positive correlation between leadership development and academic achievement may be further strengthened when leadership training is supported by transformative teaching methods that inspire, motivate and empower students.

Policymakers need to recognize that leadership education is an integral part of comprehensive student development. Leadership development programs that are based on both academic and leadership content can help prepare responsible, confident citizens who will be effective in meeting the needs of future societies.

### **Consistency with previous research**

The results of the present study corroborate many recent studies that have been conducted about student leadership and student outcomes. Ueda and Kezar (2024) found that formal leadership programs greatly enhance students' interpersonal skills, self-confidence and academic involvement. Likewise, Peng et al. (2025) reported that positive effects on students' generic competences and educational performance can be experienced in the aspects of transformational leadership experiences.

There is also cross-cultural evidence of the correlation between leadership and achievement. Based on meta-analytic research, Karadağ and Sertel (2025) found that the leadership has a significant impact on student achievement in collectivist countries. In such situations where many education settings like Pakistan have a collectivist approach, leadership interventions can be particularly fruitful in fostering co-operative learning, social responsibility, and academic excellence.

The results also confirm the notion that academic achievement is not just a function of cognitive skills, but also of non-cognitive skills like leadership, emotional intelligence, self-regulation, and interpersonal skills. A teaching strategy that deliberately fosters these wider capacities is more likely to result in learners who are successful in school, and better equipped to be successful in the workplace and in society.

The study provides empirical evidence of the effectiveness of the leadership development intervention in improving student's leadership skills and academic performance. The very high effect sizes, significant differences, and consistent improvements with all participants suggest that the intervention was highly

effective. Leadership skills seem to be a key to academic achievement, as it helps to reinforce self-regulation, motivation, communication, collaboration, critical thinking and personal responsibility.

The results are consistent with the current educational theories and empirical studies that stress the value of the holistic development of students. Schools must, therefore, embed leadership education in formal and informal learning to ensure that students achieve best academic performance and are ready for leadership in the society. Further research could examine the impact of leadership intervention over longer periods of time across a range of educational levels, cultures, and student groups to enhance the understanding of leadership development and achievement.

## **CONCLUSION**

This study showed that students' intervention on leadership skills has helped them to achieve a lot in terms of leadership competencies and their students' academic achievements. Selective training programs effectively improved students' leadership abilities and their learning skills i.e. academic achievements based on the significant post-test mean score increase for students' leadership skills and students' Academic Achievements. The uniformity of the improvement in the participants was demonstrated by the reduction in the standard deviation and the standard error of the study result, which indicated its reliability.

The intervention produced significant effects as demonstrated by extremely high values of Cohen's  $d$  and Hedges'  $g$ . Leadership skills and students' academic achievement, showing a great significant improvement beyond statistical significance, were the skills observed which surpassed the size of the changes, being larger than 4.0 and 5.0, respectively. To put it simply, the overall study results indicated that the improvement of the leadership skills of the students promoted the student's academic achievements, which in turn improved their communication skills, enriched their general knowledge, reduced their shy and hesitant nature, made them critical thinkers and problem solvers, involved them in the learning environment, and thus made them successful and responsible human beings of the society.

## **RECOMMENDATIONS**

The following recommendations are the results of the study:

1. Educational institutions and administrations should provide structured leadership development training for all students, covering leadership and teamwork skills, and incorporate practical learning opportunities into the curriculum, including group projects, team mentoring and student-led events, to allow students to acquire leadership skills.
2. Teachers continuously assess the students' leadership activities to help students understand the success and shortcomings of their activities and support their engagement in groups to strengthen the value in their groups.
3. Pupils should be involved in the learning leadership and in group working and collaboration in activities. They need to be involved in leadership sessions and seek opportunities to have some control over classroom and school activities. They must know themselves through examining their strongest leadership qualities and their weaknesses and collaborate with peers by taking on their responsibilities and establishing an open space that is conducive to everyone.
4. Parents/guardians to foster leadership skills in children throughout their development and encourage children to take on leadership positions in student councils or other extra-curricular activities.



5. Policymakers, curriculum developers and government leaders need to include leadership as a permanent part of the education system as a building block. Leadership education should be reflected in the content of subjects/schools; should make funds, other resources available for teacher training in leadership and encourage educational institutions to collaborate with universities and external organizations to offer students concrete leadership experiences.
6. This was a single- group research; the same research can be exercised with prolonged interventions on two different groups, i.e., an experimental and a control group and further study can be carried out that increases in the leadership skills of students to promote their academic achievements.
7. Leadership education should be reflected in subjects/schools and should provide funds and other resources for teacher training on leadership development and urge educational institutions to work with universities and outside organizations to give students practical leadership opportunities.
8. This was a single- group research; the same research can be exercised with prolonged interventions on two different groups, i.e., an experimental and a control group and further study can be carried out that increases in the leadership skills of students to promote their academic achievements.

## REFERENCES

- Aquino, J. M. D., & San Luis, C. P. (2025). The role of student leadership in academic achievement: A pathway to framework development. *International Journal of Evaluation and Research in Education*, 14(5), 3675–3685.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bhuttah, T. M., Xusheng, Q., Abid, M. N., & Sharma, S. (2024). Enhancing student critical thinking and learning outcomes through innovative pedagogical approaches in higher education: The mediating role of inclusive leadership. *Scientific Reports*, 14, 24362. <https://doi.org/10.1038/s41598-024-75379-0>
- Bozkuş, K. (2026). Student leadership and student achievement: Evidence from PISA 2022. *International Journal of Educational Leadership and Management*, 14(1), 46–60.
- Headrick, J. (2024). A contemporary view of civic leadership: Understanding college student perspectives and addressing barriers of service and engagement. *New Directions for Student Leadership*, 2024(182), 81–91. <https://doi.org/10.1002/yd.20604>
- Karadağ, E., & Sertel, G. (2025). The effect of educational leadership on students' achievement: A cross-cultural meta-analysis research on studies between 2006 and 2024. *Educational Management Administration & Leadership*. Advance online publication. <https://doi.org/10.1177/17411432251327645>
- Kroll, J. R., Beatty, C. C., & Manning-Ouellette, A. (2024). The “who,” “what,” and “why” of student leadership training. *New Directions for Student Leadership*, 2024(184), 11–19. <https://doi.org/10.1002/yd.20636>
- Letić Lungulov, M. M., & Radujkov, S. S. (2024). Researching the future pedagogues' leadership skills: Validation of the inventory of student leadership outcomes. *Inovacije u Nastavi*, 37(3), 107–119. <https://doi.org/10.5937/inovacije24031071>

- Peng, M. Y.-P., Cai, T., & Yue, X. (2025). Exploring the effect of transformational leadership on student generic skills: A moderated mediation model. *Humanities and Social Sciences Communications*, 12, Article 264. <https://doi.org/10.1057/s41599-025-04406-w>
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2019). *Using multivariate statistics* (7th ed.) (Vol. 6, pp. 497-516).
- Ueda, N., & Kezar, A. (2024). A systematic review: Pedagogies and outcomes of formal leadership programs for college students. *Cogent Education*, 11(1), 2314718. <https://doi.org/10.1080/2331186X.2024.2314718>
- Zhao, Z., Ren, P., & Yang, Q. (2024). Student self-management and academic achievement: Exploring the mediating role of self-efficacy and the moderating influence of gender. *arXiv*. <https://doi.org/10.48550/arXiv.2404.11029>