



## **INSTRUCTIONAL LEADERSHIP IN SCHOOLS: TEACHER DEVELOPMENT, SCHOOL IMPROVEMENT, STUDENT ACHIEVEMENT, AND ORGANIZATIONAL CULTURE**

Irfan Bashir Mir<sup>1</sup>, Henry Alwayne R. Mercado<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Education, Central University of Kashmir, Ganderbal, J & K. 191131, ORCID: 0000-0003-0219-5721, EMAIL :

[Irfanbashircuk@cukashmir.ac.i](mailto:Irfanbashircuk@cukashmir.ac.i)

<sup>2</sup>Eastern Visayas State Universit, Tacloban City, Philippines, Orcid: 0000-0001-6281-4956, Email: [alwayne.mercado](mailto:alwayne.mercado)

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### **ABSTRACT**

Instructional leadership plays an important role in strengthening teacher development, school improvement, organizational commitment, and student-focused educational outcomes. This study examined these dimensions within an integrated school leadership framework. A quantitative secondary-data-based cross-sectional design was used. Data were obtained from the publicly available Perceived Leadership Styles of Principals and Personal Commitment of Teachers in School Education source. Following data screening and removal of duplicate records, 1,138 teacher responses were analyzed. Descriptive statistics, independent-samples t-tests, Pearson correlation, and linear regression were applied. Task-oriented, recognition, and supportive leadership emerged as the more prominent leadership dimensions. Instructional leadership showed positive associations with teacher development, organizational commitment, student-oriented commitment, and achievement-related outcomes. Female teachers generally reported stronger scores across the major study constructs, while marital-status differences were more selective. Regression analysis showed that instructional leadership significantly contributed to teacher development, organizational commitment, and student-oriented commitment. In the broader achievement model, instructional leadership and teacher commitment dimensions jointly contributed to the outcome. Instructional leadership appears to function as an important organizational and professional mechanism linking teacher development, school culture, and student-focused outcomes. Strengthening supportive, recognition-oriented, and task-focused leadership practices may help schools improve professional commitment and overall institutional functioning.

## 1. Introduction

Instructional leadership has been identified as a significant leadership style in school administration because it prioritizes teaching, learning, curriculum and academic development as the focus of leadership practice. Instructional leadership shifts the focus of principal responsibility beyond administration to actively participating in the enhancement of classroom teaching and learning. This approach also promotes the shift in culture where leadership is shared in relation to priorities in instruction and continuous improvement (Ezzani, 2020). Thus, the role of school heads is significant when it comes to communicating teaching and learning objectives, supervising what is being taught in classrooms, helping teachers, and maintaining the presence of teaching activities on their expectations (Gading, 2024). Instructional leadership effectiveness is closely aligned with the effectiveness of teachers, as teachers need clear guidance, professional support, constructive feedback, and opportunities to improve their instructional effectiveness. Leadership that is directive and professional support can improve teachers' capacity to address classroom issues and their teacher effectiveness (Adeoye et al., 2025). Teacher professional development is critical especially because teachers' instructional leadership can provide opportunities for ongoing learning, mentoring, reflecting, sharing and enhancing pedagogical skills (Kilag & Sasan, 2023). A combination of instructional and transformational aspects in leadership styles might lead to further supporting teacher professional learning and influencing teachers to use more effective practices (Bellibaş, Kılınç, & Polatcan, 2021).

Instructional leadership is also beyond the level of any single teacher and the setting of the school. When connected with principles of equity and shared responsibility, leadership practices can shape the school culture, organizational relationships, institutional goals, and student-related outcomes. A positive culture in the organization can foster the cooperation of people, values, and professional commitment and the responsibility of all members of the cooperative group for good education (Qodiriyah, 2023). Moreover, leadership patterns that encourage instructional direction and shared involvement can help to enhance in-classroom practices and the quality of instruction throughout the school (Bellibaş, Gümüş, & Liu, 2021).

The significance of instructional leadership has been acknowledged however, previous research has often focused on aspects of its impact on specific outcomes individually. For instance, the relationship between leadership and other organizational processes such as school culture, school climate and school improvement has been explored separately and not as part of a larger integrated model (Rafiq & Gul, 2022). Other studies have addressed principal instructional leadership (Al-Mahdy et al., 2018); collective teacher efficacy (Tannvong et al., 2015); and teacher commitment (Moos et al., 2014), but these studies have not included more than one teacher- or school-related outcome. Similarly, the study on distributed leadership has shown its significance for school improvement, but the relationships among distributed leadership, teacher development, organisational commitment, and student outcomes have been less studied (Nadeem, 2024). In addition, mechanisms such as supportive school culture and teacher collaboration have been identified as important links between leadership and teacher self-efficacy and job satisfaction, and should be explored together (Liu et al., 2021). Hence, a wider analysis should be done on the connection between instructional leadership and teacher development, school improvement, organizational culture, and student achievement-related outcomes in a simultaneous manner.

A “whole child” approach to examining instructional leadership is important because leadership in schools encompasses instructional leadership as well as organizational leadership. The role of the principal in the development of school performance is important and must be taken in various aspects of school functioning as a whole, because the principal has a strong influence on school performance through management and coordination in providing school leadership to students (Sebastian et al., 2019). Additionally, teacher leadership is also linked to school culture, suggesting that leadership behaviors might affect the culture of schools (Cansoy & Parlar, 2017). Sustained improvement can occur when strong school culture is characterized by shared expectations, professional relationships, and institutional goals that are aligned to long-term educational development (Lee & Louis, 2019). Concurrently, professional development (PD) can enhance teachers' pedagogical leadership and their impact on teaching and school improvement (Fonsén & Ukkonen-Mikkola, 2019). When analyzed

together, these dimensions may thus give a fuller picture of the role of instructional leadership in teacher development, school functioning, school improvement and student learning.

### **Objectives of the Study**

1. To assess the levels of instructional leadership, teacher development, school improvement-related commitment, organizational culture or commitment, and student achievement among the study participants.
2. To examine the relationships between instructional leadership and teacher development, school improvement, organizational culture or commitment, and student achievement.
3. To determine the contribution of instructional leadership and teacher commitment dimensions to student achievement and other school-related outcomes.

## **2. Methodology**

### **2.1 Study Design**

The study used a quantitative cross-sectional design with secondary data to look at the relationship between instructional leadership, teacher development, school improvement, organizational commitment, and student-oriented educational practices. The design allowed for examining teachers' perceptions of leadership practices and their professional and organizational commitment at one moment in time via an existing educational survey.

### **2.2 Data Source**

The dataset used in this study is the publicly available data on Perceived Leadership Styles of Principals and Personal Commitment of Teachers in School Education retrieved from Mendeley Data (Kareem & Patrick, 2022). Teacher-level data on perceived leadership styles, professional commitment, organizational commitment and demographic data were found in the source. After screening data and recoding exact duplicate responses, the final number of unique teacher respondents was 1,138.

### **2.3 Study Population and Variables**

The secondary data source was used as source of the study population, which were school teachers. Demographic and professional characteristics available were gender, marital status, school board, school type and teaching level. Leaders calculated supportive leadership, task-oriented leadership, recognition, corrective leadership, expectation, reward, intervention and total leadership score. Self-development and professional commitment were used as indicators of teacher development; and organizational commitment, institutional goal orientation, collaborative practices, performance expectations, staff development and improvement-related leadership behaviours were used as indicators of school improvement and organizational culture. The teacher commitment and practices oriented towards development and support for student learning were used to represent student-related outcomes.

### **2.4 Data Cleaning and Preparation**

The data were systematically screened prior to analysis. Exact copies were identified and deleted, response ranges were verified for their validity, and the existing leadership and commitment composite scores were calculated and confirmed based on the related questionnaire items. There was also a review of the missing values and coding consistency. There were 1,138 unique respondents in the resulting cleaned data, and this data was utilized in all subsequent analyses.

### **2.5 Statistical Analysis**

Participant characteristics and the key study variables were summarized using descriptive statistics. Frequencies and percentages were used for categorical variables, and means and standard deviations for continuous and scale variables. Independent-samples t-tests were performed to determine whether there were differences between the selected mean scores for two-category groups. Pearson correlation analysis was conducted to explore interrelationships between leadership, teacher development, organizational commitment, school improvement-related measures and student-oriented outcomes. Through the use of linear regression analysis, the contribution of the dimensions of instructional leadership and teacher commitment to selected continuous outcomes was evaluated. A p value of < 0.05 was taken to be statistically significant.

## 2.6 Ethical Considerations

No interaction with the participants was involved and the study was carried out as a secondary analysis of a publicly available anonymized educational dataset. Personally identifying information was not used in analysis. The original source was properly cited and data were used for academic and research purposes only.

## 3. Results

### 3.1 Demographic and Professional Characteristics of Participants

The study was based on a sample of teachers from diverse demographic and professional backgrounds including in terms of gender, marital status, school boards, school type, age, educational qualifications, teaching experience, subject area and teaching level. The majority of the sample were female teachers and most were married. The highest number of participants were from state-board schools with participation also secured by government, aided and unaided/private schools. There was a wide range of teaching experience, academic preparation, and age of the participants, and they were all found at all school levels and represented all major subject categories. The detailed distribution of the participant characteristics is shown in Table 1.

**Table 1. Demographic and Professional Characteristics of Participants**

| Characteristic | Category        | n   | %     |
|----------------|-----------------|-----|-------|
| Gender         | Female          | 938 | 82.43 |
|                | Male            | 200 | 17.57 |
| Marital status | Married         | 862 | 75.75 |
|                | Unmarried       | 276 | 24.25 |
| Board          | State           | 915 | 80.40 |
|                | ICSE            | 175 | 15.38 |
|                | CBSE            | 48  | 4.22  |
| School type    | Government      | 349 | 30.67 |
|                | Aided           | 362 | 31.81 |
|                | Unaided/Private | 427 | 37.52 |
| Age            | <20 years       | 6   | 0.53  |
|                | 21–25 years     | 110 | 9.67  |
|                | 26–30 years     | 265 | 23.29 |
|                | 31–35 years     | 145 | 12.74 |
|                | 36–40 years     | 137 | 12.04 |
|                | 41–45 years     | 192 | 16.87 |
|                | >46 years       | 283 | 24.87 |
| Qualification  | Diploma         | 134 | 11.78 |
|                | Graduation      | 510 | 44.82 |
|                | Post Graduation | 373 | 32.78 |
|                | Others          | 121 | 10.63 |

|                |                                |     |       |
|----------------|--------------------------------|-----|-------|
| Experience     | <2 years                       | 122 | 10.72 |
|                | 2–5 years                      | 257 | 22.58 |
|                | 5–10 years                     | 258 | 22.67 |
|                | 10–20 years                    | 219 | 19.24 |
|                | >20 years                      | 282 | 24.78 |
| Subject        | Languages                      | 367 | 32.25 |
|                | Humanities/Social Science      | 259 | 22.76 |
|                | Sciences including Mathematics | 333 | 29.26 |
|                | Extra-curricular/Other         | 179 | 15.73 |
| Teaching level | Primary                        | 307 | 26.98 |
|                | Middle                         | 338 | 29.70 |
|                | High                           | 343 | 30.14 |
|                | Higher Secondary               | 150 | 13.18 |

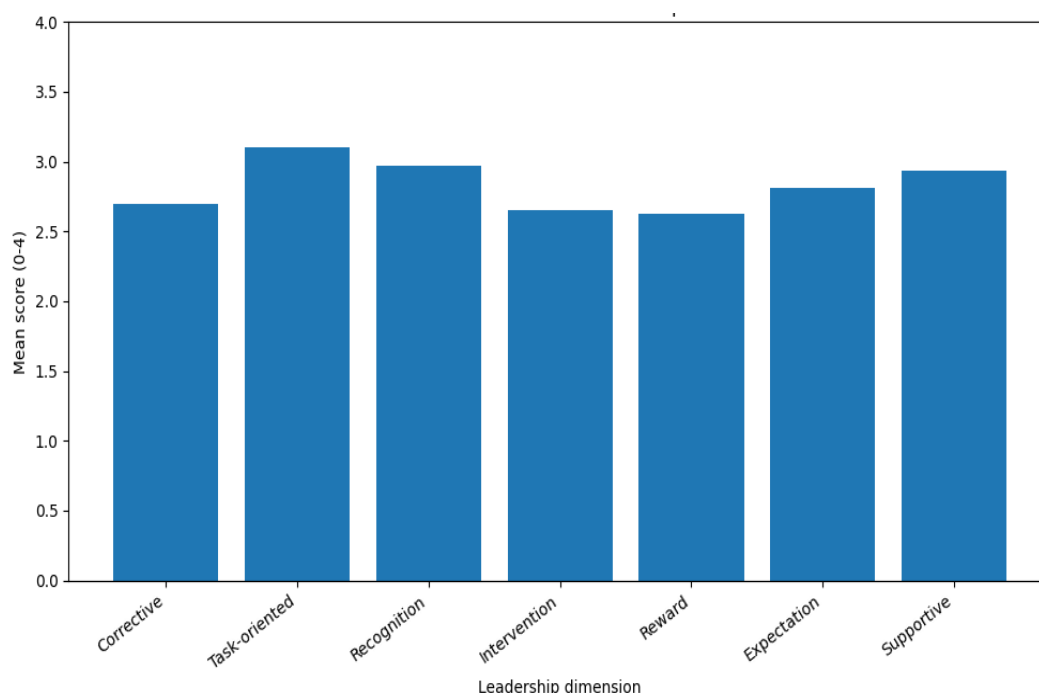
### 3.2 Instructional Leadership Profile

Instructional leadership was measured on the following subscales: corrective leadership, task orientation, recognition, intervention, reward, expectation, supportive leadership, and overall leadership score. The standardized mean scores revealed a hierarchy of task-oriented leadership, recognition, and supportive leadership. Expectation and corrective practices were in the middle ground, and reward and intervention had relatively low average ratings. The general impression was that the leadership in the schools involved was more likely to be task-oriented, valued staff contribution and was supportive in behaviour rather than reward or intervention. Table 2 presents descriptive statistics for each of the instructional leadership dimensions.

**Table 2. Descriptive Statistics of Instructional Leadership Dimensions**

| Leadership dimension     | Mean  | SD    | Minimum | Maximum | Mean score (0–4) | SD   |
|--------------------------|-------|-------|---------|---------|------------------|------|
| Corrective leadership    | 10.79 | 2.95  | 1       | 16      | 2.70             | 0.74 |
| Task-oriented leadership | 12.40 | 3.26  | 0       | 16      | 3.10             | 0.82 |
| Recognition              | 8.91  | 2.55  | 0       | 12      | 2.97             | 0.85 |
| Intervention             | 7.96  | 2.44  | 0       | 12      | 2.65             | 0.81 |
| Reward                   | 10.50 | 3.81  | 0       | 16      | 2.62             | 0.95 |
| Expectation              | 8.43  | 2.60  | 0       | 12      | 2.81             | 0.87 |
| Supportive leadership    | 29.39 | 7.47  | 0       | 40      | 2.94             | 0.75 |
| Total leadership score   | 88.39 | 18.79 | 10      | 124     | -                | -    |

The mean scores for each of the instructional leadership dimensions as presented on a common scale are shown in a graphical comparison (Figure 1).



**Figure 1. Instructional Leadership Dimensions**

The overall leadership style is balanced with task oriented, recognition and supportive behaviours being seen in more prominent proportions than the others.

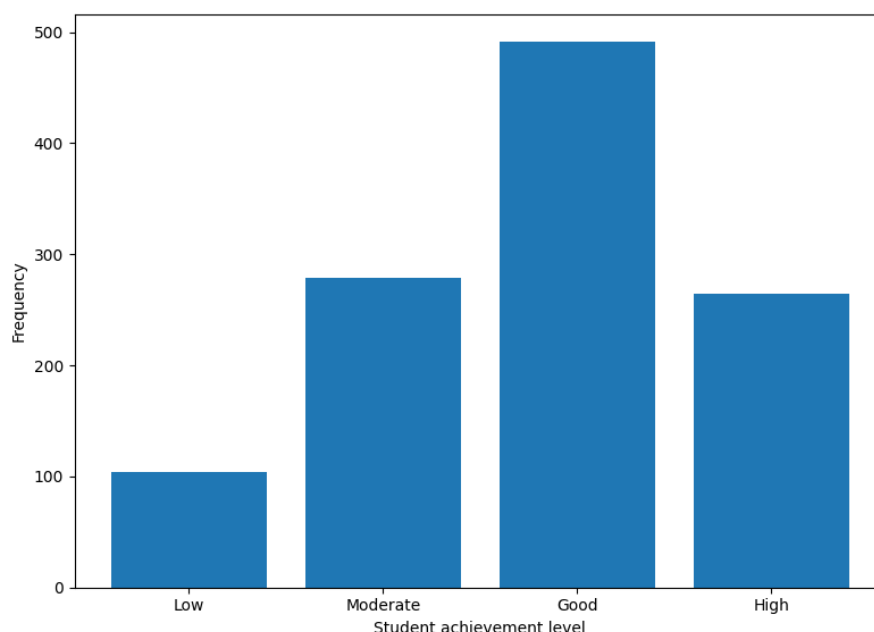
### 3.3 Teacher Development, Organizational Commitment, and Student-Oriented Outcomes

The outcome profile consisted of teacher development or self-commitment, student-oriented commitment, organizational commitment/culture, total personal commitment and student achievement. For the descriptive pattern, teachers had a high level of involvement in student oriented responsibilities and organizational roles. There was also evidence of self-development which shows that there was ongoing focus on professional improvement and personal commitment. The total personal commitment was composed of the self-, organizational-, and student-oriented dimensions. The achievement outcome showed considerable variation across the sample and thus warranted more exploration of the relationships between the achievement outcome and the measures of leadership and commitment. The outcome distributions and score ranges are summarized in detail in Table 3.

**Table 3. Descriptive Statistics of Major Study Outcomes**

| Study variable                      | Mean  | SD    | Minimum | Maximum |
|-------------------------------------|-------|-------|---------|---------|
| Teacher development/self-commitment | 11.30 | 3.18  | 1.0     | 16.0    |
| Student-oriented commitment         | 27.41 | 6.83  | 0.0     | 36.0    |
| Organizational commitment/culture   | 13.39 | 3.80  | 1.0     | 20.0    |
| Total personal commitment           | 52.10 | 12.10 | 12.0    | 72.0    |
| Student achievement score           | 69.75 | 13.49 | 25.1    | 100.0   |

The distribution of students in each of the four student achievement categories is shown in Figure 2.



**Figure 2. Student Achievement Levels**

The distribution was mainly in the good category, with relatively few observations in the low category.

### 3.4 Group Differences in Leadership and Educational Outcomes

Significant difference was found by group comparison based on gender and less significant based on marital status. Female teachers scored significantly higher on the instructional leadership, teacher development, organizational commitment, student-oriented commitment and achievement outcomes. The t-tests for each variable indicated that instructional leadership, teacher development and student achievement differed significantly when compared by marital status, while organizational commitment and student-oriented commitment were not significantly different between the married and unmarried respondents. These findings suggest that the demographic variables were related to some of the key findings of the study, but not in a consistent manner across all constructs. Table 4 provides the summary of the complete group means, variability estimates, test statistics and significance levels.

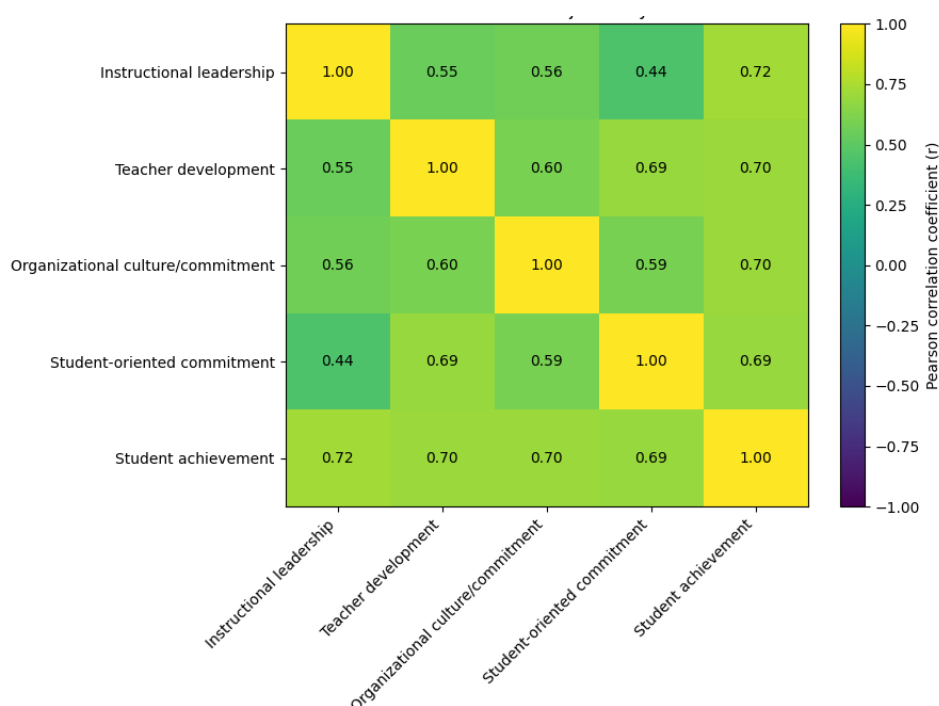
**Table 4. Group Differences in Major Study Variables**

| Comparison     | Outcome                     | Group 1 Mean $\pm$ SD      | Group 2 Mean $\pm$ SD        | t     | p      |
|----------------|-----------------------------|----------------------------|------------------------------|-------|--------|
| Gender         | Instructional leadership    | Female: 90.83 $\pm$ 18.07  | Male: 76.95 $\pm$ 17.91      | 9.93  | <0.001 |
| Gender         | Teacher development         | Female: 11.67 $\pm$ 3.00   | Male: 9.55 $\pm$ 3.41        | 8.18  | <0.001 |
| Gender         | Organizational commitment   | Female: 13.98 $\pm$ 3.59   | Male: 10.60 $\pm$ 3.49       | 12.38 | <0.001 |
| Gender         | Student-oriented commitment | Female: 28.34 $\pm$ 6.30   | Male: 23.07 $\pm$ 7.52       | 9.24  | <0.001 |
| Gender         | Student achievement         | Female: 71.73 $\pm$ 12.74  | Male: 60.46 $\pm$ 13.05      | 11.13 | <0.001 |
| Marital status | Instructional leadership    | Married: 86.68 $\pm$ 18.63 | Unmarried: 93.75 $\pm$ 18.32 | -5.57 | <0.001 |
| Marital status | Teacher development         | Married: 11.02 $\pm$ 3.23  | Unmarried: 12.17 $\pm$ 2.85  | -5.61 | <0.001 |

|                |                             |                           |                             |       |       |
|----------------|-----------------------------|---------------------------|-----------------------------|-------|-------|
| Marital status | Organizational commitment   | Married: 13.41<br>± 3.94  | Unmarried: 13.31 ±<br>3.33  | 0.44  | 0.660 |
| Marital status | Student-oriented commitment | Married: 27.56<br>± 7.07  | Unmarried: 26.95 ±<br>6.00  | 1.40  | 0.162 |
| Marital status | Student achievement         | Married: 69.15<br>± 13.72 | Unmarried: 71.62 ±<br>12.59 | -2.78 | 0.006 |

### 3.5 Relationships Among Leadership, Teacher Development, Organizational Culture, and Student Outcomes

Correlation analysis showed that all major study variables were positively related. Instructional leadership correlated positively with teacher development, organizational commitment, student-oriented commitment and student achievement. Positive relationships were also found between teacher development and organizational and student-related outcomes.



**Figure 3. Correlation Among Major Study Variables**

Instructional leadership to student achievement and organizational commitment to teacher development to student outcomes were the strongest relationships. In sum, the trend was that higher leadership perceptions were correlated with higher professional, organizational and student outcomes. All the relationships were significant at the level of 0.05.

### 3.6 Predictive Contribution of Instructional Leadership and Teacher Commitment

Regression analysis further demonstrated that instructional leadership made a significant positive contribution to teacher development, organizational commitment, and student-oriented commitment. For the three variables, the strongest explanatory contribution was made for organizational commitment, and then teacher development and student-oriented commitment. When all factors were included in the multiple variable achievement model, instructional leadership, teacher development, organizational commitment, and student-oriented commitment continued to be significant positive predictors. Instructional leadership made the highest standardized contribution, and the other commitment dimensions had unique contributions to the outcome. The overall model explained a significant amount of variance in achievement, suggesting that there is a combined relationship between leadership, teacher development, organizational functioning and student-related outcomes. The results of the regression are displayed in Table 5.

**Table 5. Linear Regression Analysis of Leadership and Educational Outcomes**

| Outcome                     | Predictor                   | B     | SE    | $\beta$ | 95% CI      | p      | R <sup>2</sup> |
|-----------------------------|-----------------------------|-------|-------|---------|-------------|--------|----------------|
| Teacher development         | Instructional leadership    | 0.092 | 0.004 | 0.545   | 0.084–0.101 | <0.001 | 0.297          |
| Organizational commitment   | Instructional leadership    | 0.114 | 0.005 | 0.564   | 0.104–0.124 | <0.001 | 0.319          |
| Student-oriented commitment | Instructional leadership    | 0.160 | 0.010 | 0.440   | 0.141–0.179 | <0.001 | 0.193          |
| Student achievement         | Instructional leadership    | 0.278 | 0.014 | 0.387   | 0.251–0.305 | <0.001 | 0.742*         |
|                             | Teacher development         | 0.688 | 0.097 | 0.162   | 0.497–0.878 | <0.001 |                |
|                             | Organizational commitment   | 0.796 | 0.075 | 0.224   | 0.649–0.943 | <0.001 |                |
|                             | Student-oriented commitment | 0.546 | 0.043 | 0.276   | 0.461–0.630 | <0.001 |                |

#### 4. Discussion

The current study revealed positive relationships between instructional leadership and teacher development, organizational commitment, student-oriented commitment, and student achievement. The descriptive findings identified some of the more salient dimensions of the task-oriented, recognition, and supportive leadership practices, suggesting that school leadership had clear direction, recognized staff contributions, and involved interpersonal support. The other factor that was apparent throughout the sample was teacher development and organizational commitment, indicating the leadership practices were accompanied by professional development and a greater sense of identification with the institution. The positive relationships between all of the major constructs also suggest that leadership, professional development, organizational culture and student outcomes were not independent processes, but rather interrelated parts of school effectiveness.

The group comparisons also proved to be informative in terms of the inter-individual variability. The scores for female teachers were more positive in instructional leadership, teacher development, organizational commitment, student-oriented commitment and achievement outcomes, whereas marital-status differences were more selective. These findings indicate that perceptions of leadership and professional commitment may differ based on personal and professional characteristics; however, it is important to note that the study was not designed to determine why this might be the case. The regression results supported the overall pattern by demonstrating that instructional leadership was a significant contributor to teacher development, organizational commitment, and student-oriented commitment. In the broad achievement model, leadership and the three commitment dimensions all continue to have a positive contribution, suggesting that there are several related organizational and professional pathways that influence educational outcomes.

The results align with prior studies which highlighted the influence of context and professional learning, especially when leaders are attuned to their school's needs and those of their staff (Brauckmann et al., 2023). Further, the positive relationship between leadership and teacher development highlights the role of professional learning communities in teacher development and school effectiveness, as collaboration, learning, and continuous improvement facilitate teacher growth (Brown et al., 2018). Likewise, the findings regarding leadership and organizational commitment reinforce previous research that principals can help establish a positive school culture by fostering trust, communication, and practices that lead to improvement (Hollingworth et al., 2018). This positive relationship between leadership, organizational processes and student outcomes is also aligned with integrated leadership models that associate principal and teacher leadership with school functioning and student outcomes (Sebastian et al., 2017). Findings of supportive and recognition-oriented leadership can be aligned with transformational leadership theories that focus on recognizing and motivating others in educational environments, developing them, and providing professional support (Anderson, 2017). Furthermore, the study's focus on school improvement mirrors the way in which leadership is seen as a tool for improving school development more equitably and responsively (Green, 2017).

The findings are of practical significance for planning of school leadership and teacher development. Enhance supportive supervision, professional recognition, clear instructional expectations, decision-making, and teacher development opportunities. These practices can build organisational commitment and create favourable conditions for ongoing school change and student-focused instruction. Leadership development programs should thus tackle both instructional and organizational duties, instead of separate programs for both.

There are a number of caveats to note. The cross-sectional design with secondary data makes causal interpretation difficult, and measures used are primarily teacher-reported. Organizational culture was predominantly measured in terms of organizational commitment and related indicators instead of with a separate culture scale. Differences between groups also may be due to unmeasured contextual factors. Future studies must be longitudinal, multi-school, include direct measures of school culture and student outcomes, and explore if teacher development or organizational commitment is a mediating factor between instructional leadership and student outcomes. This research would inform understanding of how leadership is related to sustainable school improvement.

## 5. Conclusion

This study showed that there are strong relationships between instructional leadership and teacher development, organizational commitment, student-oriented commitment, and school-related outcomes. The results indicated that some of the most evident aspects of the leadership profile were task-oriented, recognition, and supportive leadership practices. This implies that leadership for effective schools is not just about managing the system; it's also about valuing and encouraging teachers and holding them accountable for their work. There were also consistently positive relationships between instructional leadership, teacher development, organizational culture/commitment, student-oriented commitment, and achievement-related outcomes. Instructional leadership also proved to be a key factor in teacher development and organizational commitment, and the overall regression model showed that dimensions of instructional leadership and organizational commitment together predicted student-related outcomes. These findings validate the notion that school improvement is driven by interrelated leadership, professional and organizational processes and not individual practices. Gender and marital-status comparisons also showed that views about what it takes to be a good leader and to stay in the profession can vary by teacher characteristics. Overall, the study suggests that there is a need for an improvement in instructional leadership practices that positively impact teacher development, organizational retention, collaboration, and student-centred instruction. Leadership training that combines teaching with supportive organizational practices can be beneficial for schools. Future studies should build on this research in three ways: longitudinal studies, direct assessments of school culture, and more comprehensive school-based outcome measures.

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