



The Satisfaction Level of Science and Mathematics Teachers with Their School Principals as Resident Supervisors in Enhancing Students' Learning

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Abstract

The purpose of this study was to examine the satisfaction levels of Jordanian science and mathematics teachers regarding the school principal's role as a resident supervisor. The target population consisted of all Jordanian science and mathematics teachers, from which a sample of 212 male and female teachers was drawn. Data were obtained through a researcher-designed questionnaire, the validity and reliability of which were established prior to its administration. The instrument was disseminated electronically to participants using the snowball sampling method. Findings revealed that the overall satisfaction of Jordanian science and mathematics teachers with the principal's role as a resident supervisor fell within the high category. Moreover, no significant differences were identified in teachers' satisfaction levels based on gender, years of teaching experience, type of school (public or private), or area of specialization (science or mathematics). Findings concluded that the role of the school principal as resident supervisor has become a necessity rather than just an option. Accordingly, the study reached several recommendations: maintaining the promotion of the culture of resident supervision, strengthening the factors that increase the level of teachers' satisfaction with their principals, and achieving fairness, regardless of the gender of the teacher and school principal, specialization, type of school (government or private sector), experience, academic degree, and other variables strengthening the integrated relationship between school principals, teachers, students, and the local community. This study aims to investigate the relationship of teachers with educational supervision, parents, and their relationship with each other. Researchers can also conduct studies to investigate the impact of the role of the school principal as a mentor in improving the performance of teachers and students.

Keywords: School principals, Resident Supervisor, Science and Mathematics Teachers, Teachers' Satisfaction Level

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1. INTRODUCTION

In light of the acceleration of technological development and the accompanying emergence of artificial intelligence and its connection to the educational-learning process, it was necessary for the educational system to strive to keep pace with these developments and integrate them into the educational process with added value. As is known to everyone, the process of keeping pace with continuous developments requires the availability of many supporting factors, including the presence of conscious educational administrations with high efficiency to deal with these variables, drawing up educational policies, and implementing procedural plans to achieve the desired educational goals, considering these accelerating changes (Rabab'h & Almoray 2025). The educational process's success is linked to its management's efficiency and effectiveness, as school administration has come to be viewed as a process of



directing, coordinating, and planning every educational work, and not being limited to routine administrative work only.

Educational supervision is considered one of the most essential elements of the educational system. It aims to improve the educational process and make it more effective through interaction with its basic dimensions: the teacher, the learner, and the curriculum. The supervision process is collaborative, and its responsibility does not fall on the educational supervisor only but extends to the school principal as a resident supervisor who accompanies the teacher throughout the school day. He can provide guidance, advice, constructive feedback, and appropriate observations while working, which reflects positively on his performance in the classroom and thus improves the students' performance. As the school principal is considered the link between the elements of the educational and learning process (educational supervisor, teacher, student), this contributes to the positive impact of cooperation and integration of roles, saving time and effort, improving educational conditions, increasing the effectiveness of education, and achieving its goals. The success of the educational process is linked to the school principal's success and the extent of his ability to activate communication, highlight and enhance strengths, identify weaknesses, and address them. The school principal is better able to sense the immediate and urgent needs of his teachers, students, and local environment (Sunaryo, 2020).

Integrating roles between the educational supervisor and the school principal can move the educational process toward achieving the goals that any successful educational system seeks to achieve. If the administrative side of the school principal's job is to organize the school administration so that the learning process and teaching are successful, then the supervisory side of it means bringing about continuous improvement in the entire educational process and achieving the desired learning for students, as they are the center of the educational process. Then, it is very difficult to find a separation between the two sides, the administrative and the technical. This, of course, does not mean that the school principal must be familiar with the details of all the subjects taught by teachers in the school, nor do we expect that he will be able to help every teacher with the specialized and deep problems he faces related to cognitive content, which of course is considered one of the specialties of the technical educational supervisor. This does not diminish the importance of the school principal's role in his capacity as a resident supervisor, as he can coordinate with the educational supervisor to deal with and work to solve specialized and deep problems.

The objective of supervision is to furnish support and resources to educators within the classroom to enhance the efficiency and efficacy of the educational process, ensuring that teaching and learning activities adhere to relevant regulations, thereby facilitating smooth operations and optimal outcomes. This positively influences students' learning and academic performance, ultimately cultivating a capable generation prepared for the future labor market. (Bawaneh et al., 2024). The school principal's duties as a resident supervisor mean that he can determine the necessary requirements for the progress of his school to the greatest extent possible (Arafat & Wardiah, 2021). As a consequence of the significant role that the school principal plays as a resident supervisor in the evaluation process, this study was able to determine the level of satisfaction that science and mathematics teachers have with the school head as a resident leader in Jordanian schools. This factor has the potential to improve student learning.

1.1. Importance of the Study

This study is significant as it assesses the satisfaction levels of science and mathematics teachers with their school principal's performance as an instructional leader. It specifically examines the principal's role in facilitating continuous professional development, providing logistical resources, offering moral support, and enhancing classroom performance. The findings are expected to establish a clear framework of the foundations and mechanisms expected of a school principal from a teacher's perspective. Consequently, this study will provide valuable insights for educational policymakers at the Ministry of Education, supervisors, and teachers in both public and private sectors, ultimately contributing to the improvement of educational practices, particularly in science and mathematics.

1.2. Limitations

The generalizability of the findings is affected by many restrictions. The sample comprised mathematics and science educators from public and private institutions in the Irbid Governorate of northern Jordan. A total of 212 male and female educators participated, which may not sufficiently reflect the entirety of instructors or demographic regions throughout Jordan. Furthermore, the data were gathered during the 2022/2023 academic year. Data collection was executed by disseminating a digital link to teachers' groups via WhatsApp via a snowball sampling method. This approach may have led to certain respondents not being scientific or mathematics educators, and instructors from remote or arid regions may not have received the questionnaire. The results are significantly contingent upon the reliability and veracity of the utilized instruments.

1.3. Theoretical Framework

In efforts to elevate the standards of math and science education, several leadership and supervision theories offer valuable insights for principals. Transformative leadership theory posits that effective leaders motivate their followers by promoting innovation and growth by establishing a shared vision. This approach is particularly beneficial in educational settings, where principals can positively influence teacher behaviors and instructional methods, leading to enhanced student performance in subjects like math and science (Korejan et al., 2016; Bawaneh & Malkawi, 2023).

Instructional leadership further emphasizes the importance of school leaders in shaping and improving teaching practices. As instructional leaders, principals guide, support, and evaluate teachers, fostering an environment where academic standards are continuously raised (Ng, 2019). Complementary to this, distributed leadership theory suggests that leadership should be a collective effort involving multiple stakeholders. Principals who encourage collaboration among teachers and staff create a shared vision that drives students to success in math and science (Harris, 2009; Bawaneh & Alnamshan, 2023; Bawaneh et al., 2024).

Formative supervision and instructional coaching complete the framework by emphasizing ongoing professional development and feedback. In formative supervision, principals support teachers by identifying strengths and areas for growth, which is crucial for improving teaching quality in math and science (Gurbam & Chan, 2010; Bawaneh & Malkawi, 2023). As instructional coaches, principals provide targeted guidance and resources, further refining teachers' instructional strategies (Knight, 2006). Together, these theories underline the multifaceted role of the principal in promoting effective teaching and learning in math and science.

1.5. Literature Review

Students deserve quality education as it can help them develop their potential and make the world a better place for all (Ardiani, 2017; Bawaneh & Alnamshan, 2023). The school principal, as the administrative head, plays a critical role in creating an enabling environment for students to thrive academically. Principals oversee various functions, including curricular activities, fostering student success, and promoting the school's image. They act as the nexus between the school and external stakeholders, such as government agencies, parents, and community partners. These responsibilities extend to the effective management of both staff and teachers, with the ultimate aim of improving educational experience for students (Dickson, 2022).

A solid foundation in mathematics is essential, as it prepares students to tackle future challenges in diverse fields, from technology and management to everyday activities such as baking and shopping (Madzvamuse, 2022; Bawaneh & Alnamshan, 2023; Bawaneh, Al-Salman, & Rabab'h, 2023). Given the principal's pivotal role in promoting academic excellence, the focus on mathematics and science education becomes an area where effective supervision and leadership are vital. This literature review examines the role of educational supervision in enhancing science and math learning, investigates how principals can improve the professional development of teachers in these fields, and explores the impact of principal-teacher relationships on student outcomes.

Educational supervision is a complex and dynamic process that involves various stakeholders, including principals, teachers, staff, and even parents (Glanz, 1997; Bawaneh, Moumene, Aldalalah, 2020). As the central figure in this process, the principal plays a crucial role in fostering collaboration and guiding teachers toward achieving educational goals. According to Bhatnagar's definition, supervision is about providing friendly guidance and direction to improve teaching and learning (Elbanna, 2024; Bawaneh & Malkawi, 2023; Al-Hattami & Bawaneh, 2024). The principal must lead by example, encouraging teamwork among teachers and actively participating in the teaching process. Moreover, the principal must remain open to learning from others, incorporating diverse perspectives to enhance educational supervision (Mishra, 2020).

Educational supervision consolidates efforts across the school, ensuring that resources and tools are used efficiently to benefit the learning process (Abubakr et al., 2018; Bawaneh & Alnamshan, 2023; Bawaneh & Malkawi, 2023). It also facilitates the continuous assessment and improvement of teaching practices. In the context of math and science education, supervision supports teachers as they evaluate their performance, incorporating feedback from the principal to refine their instructional methods. This process encompasses various elements, such as classroom management, curriculum materials, and the sociophysical environment, all of which contribute to a dynamic learning experience.

Moreover, educational supervision focuses on improving teachers' skills and fostering team collaboration. By guiding teachers to work cohesively, the principal ensures that tasks are completed efficiently and that educational goals are met (Abubakr et al., 2018; Bawaneh & Alnamshan, 2023). Another critical aspect of supervision is introducing new educational trends and helping teachers integrate these trends into their instruction, ultimately enhancing science and math learning outcomes.

The principal's function as an instructional supervisor is paramount in improving math and science education. Principals not only set the tone for teaching and learning but also model effective teaching practices, encouraging teachers to continuously update their knowledge (Ng, 2019; Bawaneh, Al-Salman, & Rababh, 2023). They must create a conducive learning environment that fosters growth, collaboration, and active engagement from both teachers and students (Chalikias et al., 2020; Bawaneh & Malkawi, 2023). This includes promoting a growth mindset, ensuring that necessary resources are available, and facilitating cooperation among the school community.

In addition to their instructional leadership, principals play a significant role in professional development, especially in connecting these programs with the school's goals in math and science education (Kilag, 2023; Rabab'h & Veloo, 2014; Al-Hattami & Bawaneh, 2024). By overseeing the design and implementation of professional development initiatives, principals ensure that both teachers and students benefit from these programs. Regular assessment of these initiatives is essential to measure their impact on teaching and learning. Principals must evaluate how well professional development programs align with the school's objectives and contribute to improved student outcomes (Stiggins, 2001).

Furthermore, the interaction between principals and teachers significantly influences student learning. Research shows that the principal's leadership style can shape teachers' attitudes toward their work, which in turn affects student academic performance (Allen et al., 2015; Urick, 2016). By fostering strong relationships with teachers, principals can create a supportive and collaborative school environment. This positive relationship promotes trust, respect, and cooperation, making the school a more conducive place for learning (Bawaneh et al., 2023; Xu et al., 2022). Teachers who feel respected and supported by their leadership are more likely to be motivated and passionate, resulting in better classroom experiences for students (Nelson, 2013).

In conclusion, principals who maintain open communication and collaboration with teachers not only enhance the quality of instruction but also inspire better academic outcomes for students. The combined efforts of principals and teachers lead to the effective implementation of research-based teaching strategies, ultimately fostering an environment where students can excel in math and science (Meyer et al., 2020).

2. METHOD

2.1. Study Methodology

To address the research objectives, a descriptive approach was employed. Descriptive statistics—including the calculation of means, standard deviations, and item rankings within each dimension of the instrument—were first applied. Subsequently, advanced statistical analyses were conducted using a one-way ANOVA test.

2.2. Study Population and Sample

The research population included all mathematics and science instructors in Irbid Governorate, Jordan, during the 2022/2023 academic year. Using the Question-Pro program, we created a legitimate and accurate questionnaire. Using a snowball sample approach, the poll was extensively distributed among instructors via social media platforms, especially WhatsApp. The demographic distribution of the final sample is shown in Table 1.

| Variable | | Frequency Percent | | Valid % | Cumulative% | |
|----------------|------------|-------------------|------|---------|-------------|--|
| Gender | F | 152 | 71.7 | 71.7 | 71.7 | |
| | M | 60 | 28.3 | 28.3 | 100 | |
| | Total | 212 | 100 | 100 | | |
| School type | Government | 137 | 64.6 | 64.6 | 64.6 | |
| | Privit | 75 | 35.4 | 35.4 | 100 | |
| | Total | 212 | 100 | 100 | | |
| Experience | 1 - 5 | 83 | 39.2 | 39.2 | 39.2 | |
| (years) | 6 - 10 | 37 | 17.5 | 17.5 | 56.6 | |
| , | 11-15 | 41 | 19.3 | 19.3 | 75.9 | |
| | > 15 | 51 | 24.1 | 24.1 | 100 | |
| | Total | 212 | 100 | 100 | | |
| Specialization | Science | 132 | 62.3 | 62.3 | 62.3 | |
| - | Math | 80 | 37.7 | 37.7 | 100 | |
| | Total | 212 | 100 | 100 | | |

Table 1. Study Sample of Instructors Based on the Study Factors

Table 1 indicates that the study sample comprised 212 teachers, with 152 female teachers accounting for 71.7% and 60 male teachers representing 28.3%. The distribution of teachers was 64.6% from public schools and 35.4% from private schools. The distribution of teachers' experience was categorized into four groups: 1-5 years (39.2%, n=83 out of 212), 6-10 years (17.5%), 11-15 years (19.3%), and over 15 years (24.1%). The study focuses on the relationship between mathematics and science teachers and the school principal, who serves as the resident educational supervisor. Consequently, the teachers in the sample were categorized based on their specialization. There were 132 science teachers out of a total of 212, accounting for 62.3%, while the number of mathematics teachers was 80, comprising 37.7% of the total, including both male and female educators.

2.3. Study Instrumentation

The researchers in the present study reviewed theoretical literature and existing studies concerned with school administration and the nature of the relationship between teachers and principals. Based on this review, a questionnaire was designed using a six-point Likert scale (ranging from strongly agree = 6 to strongly disagree = 1 for positively worded items, and the reverse for negatively worded items). This scale was selected, instead of a five-point format, to minimize the likelihood of respondents choosing the neutral option, thereby enhancing the precision and credibility of the findings. The preliminary version of the instrument contained 22 items within a single dimension, aimed at assessing teachers' satisfaction with their relationship with the school administration.

Validity of the instrument: To establish content validity, the initial 22-item version was reviewed by a panel of eight experts. The panel consisted of three university faculty members (from the University

of Jordan and Yarmouk university), two school principals, and three teachers (two male teachers—one specializing in mathematics and the other in physics—and one female teacher specializing in mathematics). The experts were asked to evaluate the clarity, relevance, and appropriateness of each item for measuring the intended construct. Based on their feedback, four items were removed, three were revised, and the final version of the questionnaire consisted of 18 items.

The instrument's reliability: The reliability of the instrument was assessed by evaluating the internal consistency of the questionnaire. The analysis produced a Cronbach's alpha coefficient of 0.938, surpassing the established threshold for high reliability. This finding validates the instrument's stability and suitability for data collection in humanities and social science research, as corroborated by prior studies (AlKellani & AlSharifeen, 2011; Obiedat et al., 2016).

2.4. The Statistical Standard

To classify the questionnaire items, a categorical framework was applied based on their mean scores. Following the procedure of Al-Rashidi (2018) and Bawaneh, Moumene, and Aldalalah (2020), the class interval (P) for the scale was computed as:

$$P = (U - L) / N = (6 - 1) / 3 = 1.67$$

In which U and L denote the upper and lower endpoints of the scale, and N is the number of desired categories (weak, medium, strong). This value demarcated the following intervals: Weak: Scores from 1.00 to 2.67, Medium: Scores from 2.68 to 4.35, and Strong: Scores from 4.36 to 6.00. Items were assigned to a category based on which interval their mean score fell within.

3. RESULTS

The preliminary data analysis involved verifying key statistical assumptions. An examination of skewness and kurtosis values, assessed against the benchmarks established by Mallery and Darren (2000), showed that data did not significantly deviate from a normal distribution, as all values were proximate to zero. Additionally, the data satisfied the assumption of linearity required for the intended analysis.

The initial study topic examined the degree of satisfaction among Jordanian science and mathematics educators with the effectiveness of their school administrators as resident educational supervisors. The arithmetic means and standard deviations for each of the eighteen questions assessing this construct were computed. The analysis incorporated the complete sample of 212 teachers, and the findings are summarized in Table 2.

Table 2. The Averages, Standard Deviations, and Items Classified by Degree of Satisfaction with respect to the Connection Between Principals and Science and Mathematics Instructors in Jordan as Resident Educators (N=122)

| No | Item | | SD | Category |
|----|--|------|------|--------------|
| 1 | The school principal is close to the teachers and treats them as brothers. | 4.34 | 1.26 | M |
| 2 | The school principal is fair in his dealings with teachers. | 4.33 | 1.36 | M |
| 3 | The school principal honors teachers who provide distinguished initiatives | 4.16 | 1.47 | \mathbf{M} |
| | in education. | | | |
| 4 | The director of the school will understand the teacher's situation if he tells | 4.49 | 1.26 | Н |
| | him about it. | | | |
| 5 | 5. The director of the school gives teachers chances to improve their ways | 4.41 | 1.22 | Н |
| | of teaching. | | | |
| 6 | 6The director of the school wants teachers to always use computers in the | 4.58 | 1.19 | Н |
| | classroom. | | | |
| 7 | The school principal consults teachers before making decisions, especially | 4.08 | 1.37 | \mathbf{M} |
| | those related to teaching and learning. | | | |
| 8 | The school principal visits teachers either online or in face-to-face classes. | 4.21 | 1.39 | \mathbf{M} |
| 9 | The school principal gives teachers constructive feedback regarding their | 4.35 | 1.19 | \mathbf{M} |
| | practices in the classroom. | | | |
| 10 | The school principal distributes teachers' teaching loads in a fair manner. | 4.43 | 1.25 | Н |
| 11 | I learned a lot from the school principal's feedback. | 4.44 | 1.2 | Н |

| No | Item | Mean | SD | Category |
|--|---|------|------|--------------|
| 12 | The school principal represents a role model for discipline at work. | 4.62 | 1.15 | Н |
| 13 | The school principal uses the method of reward and punishment fairly. | 4.03 | 1.34 | M |
| 14 | The school principal informs teachers about instructions and systems on | 4.69 | 1.2 | Н |
| | an ongoing educational reform program. | | | |
| 15 | I feel a desire to help the school in crisis. | 4.82 | 1.05 | Н |
| 16 | The school principal highly appreciates my participation in extracurricular | 4.28 | 1.34 | \mathbf{M} |
| | activities outside of school hours. | | | |
| 17 | I welcome the school principal to visit me in class at any time. | 4.69 | 1.03 | Н |
| 18 | I would like to continue working at my current school and with my current | 4.81 | 1.22 | Н |
| | principal. | | | |
| The general degree of teachers' contentment with their school principals | | 4.44 | | Н |

The findings presented in Table 2 indicate that the overall arithmetic mean regarding the satisfaction levels of Jordanian mathematics and science teachers with their school principals is 4.44. This suggests that the satisfaction level of Jordanian teachers regarding their principals falls within a high range. In the meantime, the highest arithmetic mean was recorded for the last item (eighteenth) at 4.81, reflecting the teachers' inclination to persist in their roles within the same school and under the guidance of the same principal. This was confirmed by items (17 and 14), which shared the second-highest arithmetic average of 4.69. The seventeenth item indicates a continuous and open welcome to the principal's visit to class lessons, while the fourteenth item confirms the principal's participation with teachers in the latest developments and instructions regarding teaching and learning. Despite this, some items fell within the average category, and paragraphs (13, 7, 3) were the lowest with arithmetic means (4.03, 4.08, 4.16), respectively. These paragraphs demonstrate the administration's method of activating punishment for teachers in the event of violating the applicable instructions and regulations, while the results indicate a low rate of principals' involvement of teachers in making decisions regarding teaching and learning. This is confirmed by the low rate of administrative reward for teachers who take the initiative in implementing new and distinct teaching and learning methods. We can attribute this to the fact that the instructions and teaching mechanisms are proposed by the Ministry of Education and included in the teacher's guide. Although there are spaces of freedom for creativity and innovation in this field, they must all be under the umbrella of the instructions issued by the Ministry to maintain the quality of education and adjust it.

In response to the second question, which enquires: "Did the level of satisfaction among Jordanian science and math teachers regarding their school principals as resident educational supervisors in enhancing students' learning vary based on certain variables (Gender, type of school, number of years of experience, teachers' specialization)?" The arithmetic means and standard deviations were calculated for variables such as teachers' gender, school type, years of experience, and field of specialization. The findings are detailed in Table 3.

Table 3. The Means and Standard Deviations of the Satisfaction Levels of Jordanian Science and Math Instructors with Their Relationships with Their Principals, as Influenced by Several Factors

| Vai | riable | N | Mean | SD |
|--------------------|------------|-----|------|-------|
| Gender | Female | 152 | 4.44 | 0.833 |
| | Male | 60 | 4.43 | 0.989 |
| | Total | 212 | 4.43 | 0.877 |
| Type of school | Government | 137 | 4.43 | 0.88 |
| • • | Private | 75 | 4.43 | 0.879 |
| | Total | 212 | 4.43 | 0.877 |
| Experience (years) | 1 - 5 | 83 | 4.42 | 0.774 |
| | 6 - 10 | 37 | 4.25 | 0.956 |
| | 11–15 | 41 | 4.37 | 0.863 |
| | > 15 | 51 | 4.64 | 0.971 |
| | Total | 212 | 4.43 | 0.877 |
| Specialization | Science | 132 | 4.48 | 0.943 |
| • | Math | 80 | 4.35 | 0.755 |
| | Total | 212 | 4.43 | 0.877 |

Table 3 presents the arithmetic means and standard deviations regarding the satisfaction levels of Iordanian science and mathematics instructors with their principals in relation to the enhancement of student learning, based on various variables. The findings revealed a minimal difference in the arithmetic mean between males and females, recorded at 0.01 in favor of females. The arithmetic mean for males was 4.43, accompanied by a standard deviation of 0.989, while for females, it was 4.44, with a standard deviation of 0.833. The arithmetic mean of satisfaction levels among teachers in private educational institutions was identical to that of their counterparts in government schools, with both groups achieving an arithmetic mean of 4.43 and a standard deviation of 0.880. The arithmetic means of Jordanian teachers' happiness with their relationships with their principals varied according to their years of experience. The lowest mean was for the category of teachers with (6-10) years of experience, with a mean of 4.25, while the highest mean came for teachers with the most experience within the category (more than 15 years), with a mean of 4.64, while the mean for the two categories (less than five years, 11-15 years) converged and were respectively (4.42, 4.37). Since the study is interested in the relationship of mathematics and science teachers with the school principal as a resident supervisor, the number of science teachers was 132 out of 212, representing 62.3%, and the number of mathematics teachers was 80, representing 37.7%. The arithmetic mean of science teachers' satisfaction with their principals as resident supervisors was 4.48, whereas the mean for mathematics teachers' satisfaction with their relationship with their principals was 4.35, resulting in a difference of 0.13 in favor of science teachers. The results indicate notable and diverse differences in the arithmetic means of Jordanian teachers' satisfaction regarding their relationship with principals across several variables, including gender, years of experience, and specialization (mathematics and science). The researchers performed a one-way analysis of variance (ANOVA) to assess the significance of the differences, with results presented in Table 4.

Table 4. The One-Way Analysis of Variance (ANOVA) of Jordanian Teachers' Satisfaction with Their Principals as Resident Administrators

| Variable | | Sum of Squares | df | Mean Square | F | Sig. |
|-----------------------|-----------------|-------------------|-----|----------------|-------|-------|
| Gender | Between Groups: | 0.005 | 1 | 0.005 | 0.006 | 0.939 |
| | Within Groups: | 162.644 | 210 | 0.774 | | |
| | Total: | 162.648 | 211 | | | |
| Type of school | Between Groups: | 0 | 1 | 0 | 0 | 0.992 |
| • • | Within Groups: | 162.648 | 210 | 0.775 | | |
| | Total: | 162.648 | 211 | | | |
| Experience (years) | Between Groups: | 3.609 | 3 | 1.203 | 1.573 | 0.197 |
| 1 , | Within Groups: | 159.039 | 208 | 0.765 | | |
| | Total: | 162.648 | 211 | | | |
| Specialization (Math, | Between Groups: | 0.871 | 1 | 0.871 | 1.131 | 0.289 |
| Science) | Within Groups: | 161.777 | 210 | 0.77 | | |
| , | Total: | 162.648 | 211 | | | |

Table 4 found statistical significance at (= 0.05) for Jordanian science and math teachers' satisfaction with their relationship with school principals as resident educational supervisors in enhancing students' learning for all study variables: gender, school type, number of years of experience, and specialization, exceeding (0.05), and this means that there are no statistically significant differences for all study variables, as their statistical significance value (F=0.006, 0.939, F=0.000, 0.992, F=1.573, 0.197, F=1.131, 0.289), respectively.

4. DISCUSSION

A review of the literature and studies concerning the role of the school principal as a resident administrator and effective leader highlights the significance of this role in fostering professional learning communities. This involves an understanding of the importance of collaborative work for the sustainability of these communities. Key responsibilities include distributing leadership among teachers, motivating hesitant individuals, clarifying roles and responsibilities, organizing the school schedule to support these communities, securing necessary resources, and prioritizing student learning by promoting diverse teaching methods and strategies that address the varied needs of students, particularly in relation to technology and

artificial intelligence. The school principal's role includes informing educators and other interested parties about developments, monitoring performance, recognizing efforts, fostering a cooperative environment, presenting and testing ideas, and facilitating professional development based on teachers' needs.

The findings indicated a high average level of teacher satisfaction with school administration. This result indicates a positive correlation, as the relationship between instructors and administrators in schools relies on intellectual maturity, awareness of responsibilities, and a commitment to humanitarian values, which in turn motivates teachers to fulfil their duties. They are trained on everything new through professional development programs. The self-monitoring that characterizes Jordanian teachers also strengthens the relationship between the teacher and the school principal and increases trust, as each carries out his duties and responsibilities, whether in school or in distance education. This is in addition to the fact that Jordanian society is characterized by a large and important legacy based on respect for the religious dimension. Customs and traditions that establish a relationship between teachers and school administration are based on mutual trust, respect, and cooperation, as well as the school principals and teachers' participation in the school's decision-making process in general and regarding teaching and learning. They also participate in social relations, visits, and meetings outside the work society. On the other hand, the teachers' Union played a very important role in breaking down the barriers between them (teachers and school principals), supporting each other, and promoting teamwork.

The result of the second question of the study confirms that there are no statistically significant differences in the degree of satisfaction of science and mathematics teachers with their relationship with school administrations according to a group of variables, namely the gender of the teacher, the number of years of experience, the type of school, and the teacher's specialty (science and mathematics); this can be attributed to many reasons, the most important of which is that school administrations, male and female, have a high degree of culture, awareness, sophistication, and qualification in the soft skills of communication, fairness, leadership skills, respect for colleagues, and appreciation of circumstances while maintaining continuity of work with all professionalism. On the other hand, we find the teacher appreciates this interaction. Humanity and sophistication in communication on the part of the administration, and male and female teachers have a high degree of culture and awareness as well, as they possess higher degrees after bachelor's degrees, such as Higher diplomas, master's degrees, and some of their doctorates in their specializations or educational sciences. In addition, they undergo various professional development programs that enhance the spirit of cooperation, communication, and working as an effective team in serving the educational process. On the other hand, the conditions in which male and female teachers work with male and female principals - although male schools are separate from female schools - the conditions, factors, facilities, rights, and duties are equal. There is no difference in that, depending on the gender of the teacher or their specialization, such as science or mathematics.

The findings revealed no statistically significant differences in teachers' satisfaction with school administration when comparing public and private schools. This confirms what was mentioned above, as awareness and understanding from all parties: teachers and school administrations in the public and private sectors believe that mutual respect, fairness in dealing with, and professionalism in performing duties and responsibilities to achieve the public interest are the foundations of building relationships. This, of course, reflects a bright image of Jordanian teachers and reflects the high professionalism with which they deal, which is reflected in enhancing student performance and achieving the desired educational goals.

5. CONCLUSION

The results indicated that the overall average satisfaction level of science and mathematics teachers concerning the role of the school principal as resident supervisor was high. The results revealed no differences in the satisfaction levels of Jordanian teachers regarding the role of the school principal as a resident supervisor across all independent variables: teacher gender, years of experience, type of school (governmental or private), and teacher specialty (science, mathematics). The findings are significant for educational planners, decision-makers, and stakeholders, emphasizing the necessity to improve educational supervision requirements and the role of the head of the school as the primary supervisor. The principal possesses the most comprehensive understanding of the school's realities and the necessary support, follow-up, and development needed. Limitations of the study must be acknowledged in the interpretation of the findings. Several factors influence the ability to generalize results. The sample consisted of Jordanian

math and science teachers employed in public and private schools within Irbid Governorate, northern Jordan, with data collection occurring during the 2022–2023 academic year. Furthermore, data collection was carried out by disseminating a link to teachers via WhatsApp. This methodology may have yielded responses from individuals outside the fields of science or mathematics education, and it is possible that those in rural or desert regions did not receive the questionnaire. Moreover, the findings were strongly dependent on the validity and reliability of the instruments employed. Based on the results of the study, it was concluded that the role of the school principal as a resident supervisor is no longer optional but has become essential. Consequently, comprehensive measures are required, including the preparation of infrastructure and the provision of supportive services, as these efforts may ultimately enhance teachers' performance and, subsequently, students' performance and skills.

6. RECOMMENDATIONS

- 1. Enhancing teachers' financial and moral motivation to maintain a high level of teacher satisfaction with their relationship with school administrations.
- 2. Strengthening the factors that increase teachers' satisfaction with their principals and achieve fairness, regardless of the gender of the teacher and school principal, specialization, type of school (government or private sector), experience, academic degree, and other variables.
- 3. Strengthening the integrated relationship between school principals, teachers, students, and the local community.
- 4. Maintaining the Teachers Union is important because of its major role in strengthening relations between the school administration and teachers.
- 5. Studies should be conducted to examine the factors that enhance teachers' relationships with school administrations and focus on them.
- 6. Studies should be conducted on teachers' relationships with educational supervision, parents' relationships, and their relationships with each other.
- 7. Researchers may also do studies, including action research, to examine the influence of the school principal's mentorship on enhancing teacher and student performance.

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Research Ethics. The author stated permission to conduct this study in the correct and acceptable method, MOE. Informed consent was sought and received via a consent form that was signed by each of the participants in the study.

Data Availability Statement. Data supporting the findings and conclusions are available upon request from the corresponding author.

Conflicts of Interest. No conflict of interest is declared by the authors.

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