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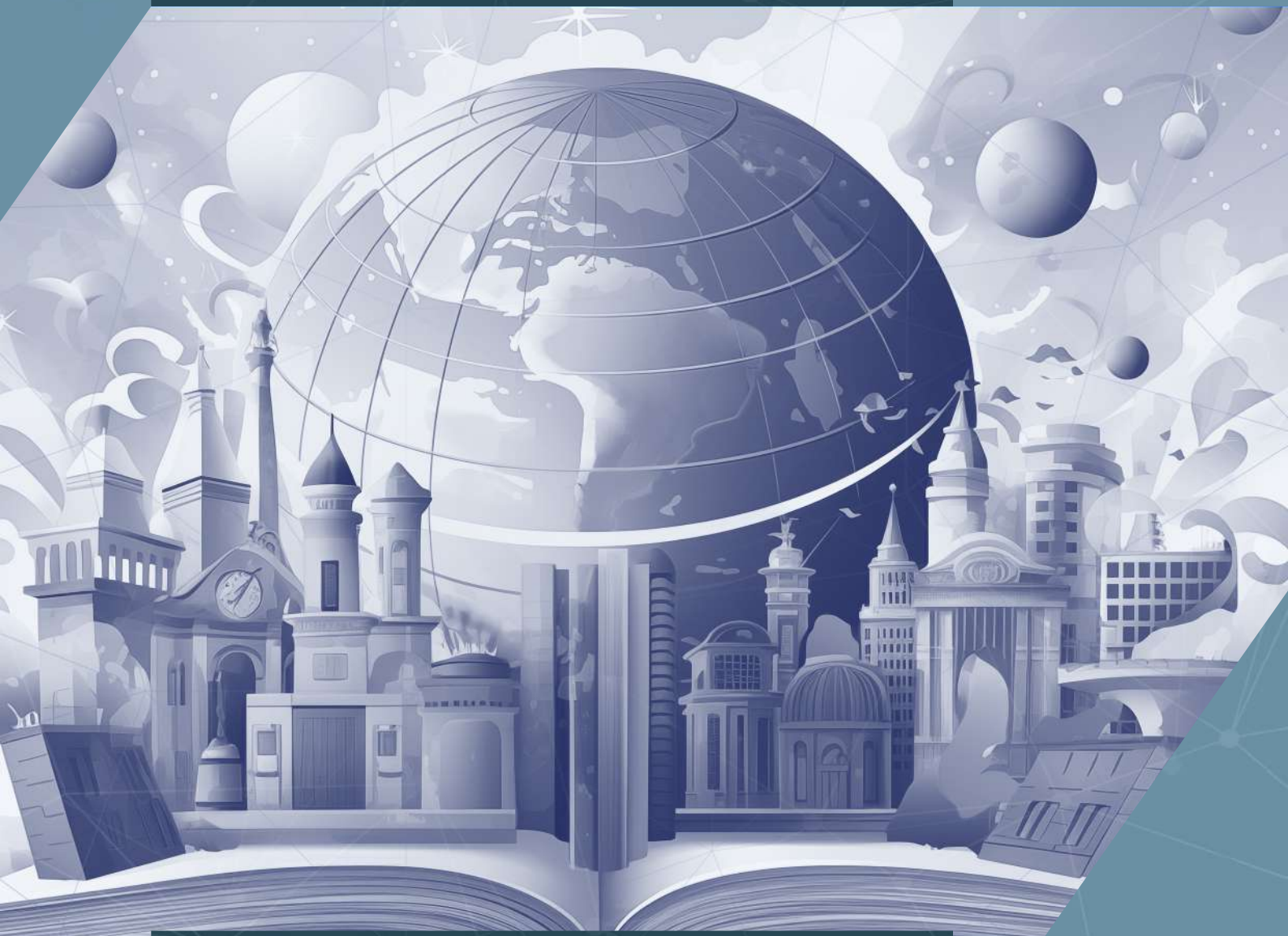

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# The role of school management in ICT implementation on student achievement and teacher attitudes in the Arab sector in Israel

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**Abstract**. This study aims at evaluating the effectiveness of school management in the integration of ICTs within the schools with emphasis on students' performance and teachers' perception. The data were obtained from questionnaires and interviews conducted on 11 high schools in the Arab and Bedouin localities of Israel. This study shows that strategic management, structural design, and leadership enhance students' performance especially in Mathematics and English. The schools that have well defined policies on ICT and good leadership achieved high levels of student engagement and better academic performance. However, the study reveals that some inequality prevails in the system; the northern schools are in a better condition as compared to the Bedouin schools in the south where inadequate resources and cultural barriers are also seen. Leadership was found to be the most important variable affecting the teachers' perception on ICT use in teaching and learning process; particularly the hybrid leadership practices positively affected the teachers' involvement and student achievement. The findings imply that more leadership and specific strategies are required to support effective integration of ICTs in the underprivileged areas.

**Keywords**. ICT Implementation, School Management, Student Achievement, Teacher Attitudes

## 1. Introduction

The use of ICT (Information and Communication Technology) in education has emerged as one of the most important priorities worldwide as it can contribute to increasing student achievement, enhancing teaching practices, and transforming the management of schools. In Israel, like most other countries of the world, ICT is considered as a vital instrument to narrow educational gaps, enhance students' interest, and equip the learners for the challenges of the new age (Amzaleg & Masry-Herzallah, 2021; Badarne, 2019b). However, the integration of ICT in schools can only be as good as the management in schools and the perception that the teachers have on these technologies.

The present study reveals that school leadership and management play central roles in the implementation of ICTs. Some of the aspects of school management include planning, organizing leadership and control, and these are vital in implementing technology in education with a view to meeting set goals and improving the learning outcomes (Eickelmann, 2011). According to the previous research, effective school managers give proper support for the ICT

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initiatives, develop the favorable climate for innovation, and participate in the process actively to enhance both teachers' attitudes and students' achievement (Blau & Shamir-Inbal, 2017; Cohen, 2019).

In Israel's Arab and Bedouin populations, the issues related to the availability of and access to ICT are different than in other sectors of the country. The availability of technology, physical facilities and the culture on the use of technology in teaching and learning is not the same in the northern and southern regions of the country (Abu-Kaf et al., 2019). Some of these gaps are even more evident in the Bedouin population where the infrastructure is scarce and the cultural resistance towards technological advancement is higher (Abu-Asbah, 2017). Therefore, it is imperative that school management ensures that the challenges mentioned above are addressed to enhance the effectiveness of ICT on student achievement. By employing more strategic approaches to leadership, more supportive leadership and sound organizational structures it is possible to overcome these barriers and enable the effective integration of technology (Arar & Abu Nasra, 2020).

It is also important to consider the teacher's attitude in the process of implementing ICT in education since they have a significant influence on the success of the process. Studies have found that teacher's perceived preparedness to integrate new technologies in teaching and learning is in fact influenced by the level of support from the school administration (Blau & Shamir-Inbal, 2017; Avidav-Ungar & Eshet-Alkalai, 2014). When leaders in the schools identify with the use of ICT, teachers will also be more likely to adopt technology for teaching and learning with the potential of enhancing the learning achievement of the students (Basri et al., 2018). On the other hand, those schools which have poor leadership or rather indistinct policies, teachers tend to be demotivated or lack the confidence to incorporate technology in the teaching and learning processes (Al Shobaki & Abu-Naser, 2017).

## 2. Literature Review

### 2.1 School Management and ICT Implementation

In the context of schools, efficient school management is an important factor in the implementation of ICT. Management involves five key functions: They include planning, organizing, leading, controlling, and communication. Planning is the process of defining goals and ways on how to integrate ICT in schools. Coordination means arranging of resources and activities whereby technology can be effectively put to use in teaching and learning. Leadership is important as leaders encourage teachers and learners to engage in use of technology while control entails assessing and supervising the uptake of ICT in learning institutions so that it is in harmony with the goals of the school. It helps in passing important information to and from all the stakeholders in the school such as the staff, students and parents on matters concerning ICT in the school.

There has been some research on the link between school leadership and ICT integration, and most of the authors stress a proactive and supportive approach. School leaders who articulate a vision and encourage innovation support technology integration more effectively in teaching and learning than do those who do not (Cohen, 2019). Research evidence has established that leadership that inspires and mobilizes employees is crucial in the implementation of ICT. Such leadership leads the teachers to try out the new technologies and integrate them in their teaching and learning practices (Arar & Abu Nasra, 2020). Also, distributed leadership that is characterized by decentralization of authority in the school has been found to enhance collaboration and effective ICT integration.

However, the differences that exist in the levels of infrastructure and leadership across the different regions present huge challenges to the integration of ICT. Another factor that influences the integration of ICT in schools is regional disparity where northern schools with more developed leadership and infrastructure got better performance than the southern schools especially those in the Bedouin areas where factors such as lack of infrastructure and culture pose challenges (Abu-Kaf et al., 2019).

Hybrid leadership helps the school managers to meet the demands for innovation while at the same time providing structures necessary to the teachers to facilitate their use of ICT. This leadership style implies balance of skills and creativity while at the same time catering for curriculum objectives in technology. Research shows that hybrid leadership can significantly improve teacher confidence in using ICT, as it combines motivational support with practical guidance and continuous professional development. It is crucial that schools adopt hybrid forms of leadership to obtain higher levels of ICT implementation as teachers are empowered to come up with new ideas as well as supported with frameworks through which use of ICT is aligned with educational goals (Arar & Abu Nasra, 2020).

### 2.2 Impact of ICT on Student Achievement

The use of ICT in teaching and learning is evident to have positive effects on the student's achievement especially in English and Mathematics. Studies have also indicated that the use of ICT can improve the students' interest, participation, and comprehension of lessons particularly when using tools that are interactive and in the form of simulations (Blau & Shamir-Inbal, 2017). In Mathematics, the utilization of ICT tools like graphing calculators and educational software has been associated with enhanced problem-solving skills and knowledge retention among the learners (Basri et al., 2018). Research in English language learning also supports the use of ICT in enhancing reading and writing skills through digital storytelling, language practice applications and online forums.

However, there has been evidence that shows that the use of ICT in teaching and learning is more effective in some subjects than in others. Although the effectiveness of ICT in learning has been phenomenal especially in Mathematics and Science, it has been average in the improvement of English language learning. This difference may be explained by the kind of ICT tools that are used in the respective subjects and the level of comfort of the teachers in integrating them. It is also important to note that teachers tend to easily adopt the use of ICT in areas of learning which require the use of real life and interactive activities like Mathematics and Science (Basri et al., 2018). However, English language learning may still depend on conventional teaching and learning techniques which do not tap all the possibilities of ICT. The regional difference in the effectiveness of ICTs also reveals disparities to some extent. The northern regions where the infrastructure is relatively better than the southern Bedouin sector, the schools have reported to have better students' achievements than the schools in the southern Bedouin sector where there are constraints in the use of ICT due to infrastructural and cultural factors (Abu-Asbah, 2017). These results emphasize that future research should focus on the provision of adequate technological support and teacher training in order to support the integration of technological tools in teaching and learning processes for all students.

### 2.3 Teacher Attitudes Towards ICT and Their Influence

It is important to note that the perception that teachers have towards ICT is an important determinant to the success of ICT integration in teaching and learning processes. Therefore it can be concluded that positive teacher attitudes towards the use of ICT are

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associated with higher levels of technology integration in teaching. The awareness of the importance of ICT in teaching and learning makes the teachers incorporate them in their teaching and learning activities in order to achieve better results. (Blau & Shamir-Inbal, 2017). The extent to which teachers are likely to embrace ICT is a function of their confidence and this confidence is in turn a function of the support accorded them by the school leaders and the level of training and support provided to them, including provision of relevant resources.

Whereas in the schools that have good leadership and where the leadership is proactive there are high chances that the teachers will have a positive attitude towards use of ICT in teaching. The administration that offers professional development and the explicit mission regarding the integration of ICT in schools makes the teachers have a favorable attitude in the use of the technology (Arar & Abu Nasra, 2020). On the other hand, in the regions with lower leadership or when there is cultural resistance to the technology, for instance, the Bedouin population of the southern region of Israel, the teachers' perception towards the use of the ICT is negative. This is because there is a lack of infrastructure and training which make the workers have low confidence in embracing technology (Abdelrahman & Salhi, 2020).

Hybrid leadership, that integrates the inspirational elements of transformational leadership and the directive aspects of instructional leadership, is especially important in determining teacher attitudes towards ICT. Hybrid leaders then offer the excitement and vision that is required to motivate teachers to adopt ICT into their classroom, as well as the direction and guidance on how to go about it. Teachers in the schools with hybrid leadership models are likely to embrace positive attitudes towards ICT as they are able to feel the sense of confidence to innovate and get the backing for their teaching methods (Day et al., 2021). This implies that the hybrid leadership style might be the most appropriate to use in encouraging teacher participation in the use of technology especially in difficult school settings.

## 3. Hypotheses

This study was designed to examine the relationship between school management and student performance; and the extent to which some management functions such as planning, organizing, leading and controlling affect student's performance. The study hypothesized that since efficient management of schools would directly enhance students' achievement then there would be a positive change in student achievement in English and Mathematics. The schools that had a clear leadership structure, clear organizational structure and plans which were well implemented were expected to create environments that would enhance the integration of ICT in teaching and learning thereby improving academic standards. Moreover, it was expected that schools that have good management systems in place would have the students to be more motivated, engaged, and achieve better results owing to the effective utilization of ICT tools.

A third important domain of analysis concerned the management of schools as a factor that affected teachers' perceptions of ICT. Based on the above review of literature, it was predicted that school management would have a central influence on teachers' readiness and preparedness to incorporate ICT in their teaching practice. Teachers who received support from their leaders, had proper information on the uses of ICT and had the necessary ICT tools and materials were expected to have positive attitudes towards ICT. The schools whose leaders were proactive in the use of ICT and provided training and assistance were expected to have a higher level of teacher's use of technology. On the other hand, where management was not as supportive or where there was no clear direction from the management regarding the use of ICT, it was assumed that the teachers would have negative attitudes towards the use of ICT and thus adopt it to a lesser degree in the classroom.

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## 4. Methods

This study employed a mixed-methods approach, integrating both quantitative and qualitative data collection techniques to provide a comprehensive analysis of the relationship between school management, student achievement, and teacher attitudes toward ICT in the Arab and Bedouin sectors of Israel. The mixed-methods approach allowed for a more nuanced understanding of how school leadership impacts ICT integration from both statistical and contextual perspectives.

### 4.1 Quantitative Methods

The quantitative component involved a structured survey distributed to teachers and school administrators across 11 high schools in the northern and southern regions of Israel. The survey was designed to examine the key research questions: the relationship between school management functions (e.g., planning, organizing, leadership) and student achievement, and the influence of school management on teacher attitudes toward ICT.

The survey included several sections. The first section collected socio-demographic information such as the respondents' roles (teacher or administrator), years of experience, and the region in which their school was located. The second section focused on measuring school management functions, with respondents rating statements related to the planning, organization, leadership, controlling, and communication processes within their schools. These questions were measured on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

To assess student achievement, existing school data on student performance in English and Mathematics were used. These data were compared with the responses related to school management to examine correlations between management practices and student outcomes. The survey also measured teacher attitudes toward ICT using Likert-scale questions focused on their perceptions of ICT's usefulness, ease of use, and the level of support they received from school leadership.

Data analysis for the quantitative component involved statistical techniques including Pearson's correlation to assess the strength and direction of relationships between school management practices and student achievement, as well as between school leadership and teacher attitudes toward ICT. Regression analysis was conducted to determine the extent to which school management practices predicted student performance and teacher engagement with ICT. Cronbach's alpha was used to assess the reliability of the scales, with high internal consistency found in the measures for both management functions and teacher attitudes.

### 4.2 Qualitative Methods

The qualitative component of this study involved semi-structured interviews with teachers and principals from 11 high schools in the Arab and Bedouin regions of Israel. These interviews aimed to explore the participants' experiences and perspectives on the integration of ICT in their schools, focusing on management practices, teacher attitudes, and student achievement. The interview protocol included questions related to the use of ICT in teaching, the role of school leadership, and the challenges faced in ICT implementation, particularly in under-resourced areas like the southern Bedouin sector. Interviews were conducted in person and digitally, and responses were recorded, transcribed, and analyzed using thematic analysis. Thematic analysis was employed to identify recurring themes and patterns within the data. Key themes such as leadership support, infrastructure challenges, and teacher training emerged, providing deeper insights into the factors influencing ICT adoption in schools. The qualitative findings helped contextualize the quantitative data, exposing the regional disparities in ICT

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implementation and the critical role of leadership in shaping both teacher attitudes and student engagement with technology.

## 5. Results

### 5.1 Quantitative Methods

The quantitative data analysis of the study established a positive relationship between ICT management practices and student performance in English and Mathematics. The study also shows that schools that had good ICT management in the areas of planning, organizing, leadership and communication received better student performance. In particular, the correlation analysis revealed that strategic planning is positively related to student performance in Mathematics with the coefficient of correlation of 0. 15 ($p < 0. 02$), which means that schools that plan their ICT integration in a proper way, achieve better results in this subject. This planning also entails integrating the educational goals with the technology resources, to ensure that the tools to be used are appropriate in the teaching and learning of Mathematics and other subjects.

Availability and utilization of ICT resources was also uniformly associated with student achievement especially in English language ($r = 0. 14$, $p = 0. 03$). The availability and maintenance of the ICT tools in schools enable one to get a conducive environment for the teachers to easily incorporate the technology in the teaching. This organization of resources be it hardware or software is in a right manner that enhances the learning of the students.

Another factor that emerged as significant was leadership with leadership having a positive relationship with student achievement in English ($r = 0. 10$, $p = 0. 03$). This was because leadership in schools was seen as having provided direction of ICT use, making sure that teachers were trained well enough and creating a culture that supported the use of new technologies which was associated with better English achievement.

The study also established that communication was another factor that influenced the study of ICT use where there was positive correlation between communication about use of ICT and English performance ($r = 0. 13$, $p = 0. 05$). The institutions that had better communication flow on matters to do with the use of ICT in schools and its objectives achieved better results in the integration of technology in the classroom and hence improved student scores.

With regard to the teacher attitudes, it was revealed that ICT was well implemented by the schools that influenced the teacher perception of technology. The management practices were also positively correlated with teachers' perception of the usefulness of ICT ($r = 0. 74$, $p < 0. 01$) and the interestingness of ICT ($r = 0. 67$, $p < 0. 01$). The schools that offered adequate support in terms of organization, leadership and communication had the positive teacher attitudes towards the integration of ICT in the teaching and learning process. This indicates that teachers who work in institutions that have well coordinated ICT are likely to adopt technology and enhance their teaching and learning processes.

*Table 1: Relationship Between ICT Management Practices and Student Achievement*

| Management Aspect | Correlation with Student Achievement | p-value | Level of Correlation |
|---|---|---|---|
| Planning (Mathematics) | 0.15 | <0.02 | Positive, Moderate |

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| | | | |
|---|---|---|---|
| Organizing (English) | 0.14 | 0.03 | Positive, Weak |
| Leading (English) | 0.1 | 0.03 | Positive, Weak |
| Communication (English) | 0.13 | 0.05 | Positive, Weak |
| Controlling | 0.07 | >0.05 | No Correlation |

*Table 2: Relationship Between ICT Management Practices and Teacher Attitudes*

| Management Aspect | Correlation with Teacher Attitudes | p-value | Level of Correlation |
|---|---|---|---|
| Planning | 0.74 | <0.01 | Positive, Strong |
| Organizing | 0.67 | <0.01 | Positive, Strong |
| Leading | 0.66 | <0.01 | Positive, Strong |
| Communication | 0.72 | <0.01 | Positive, Strong |
| Controlling | 0.48 | <0.01 | Positive, Moderate |

**5.2 Qualitative Results**

Several important findings were found from the qualitative data derived from the interviews with teachers, which concerned the implication of ICT in teaching and learning, student achievement, school administration, and teachers' beliefs. The teachers described their experiences with ICT and the difficulties they met, as well as various opinions on the role of technology in pedagogical practices.

As for the student achievement, the teachers pointed out that ICT, when properly incorporated, can improve the students' interest and motivation. For example, Muhammed from the North stated, "ICT in teaching increases the interaction of students and motivates them to learn." This means that when utilized properly technology can help to enhance the interaction in the classroom and the participation of students in the learning process, thus improving the achievement of learners. However, several teachers mentioned some barriers, especially those associated with the infrastructure and the digital gap. Alya from the North noted, "Technical faults, gaps in the level of users, and internet infrastructure problems hinder effective ICT use," emphasizing that inconsistent access to reliable technology could hinder student success.

With regards to the management of schools, the leadership's commitment to the ICT strategy was found to be one of the key factors that affect the effectiveness of the integration. Teachers said that the situation is better in the schools where management promotes the use of ICT in teaching and learning process. For instance, Chir from the South mentioned, "There is a vision that we will become a computerized school, but it is a process and we are on our way."

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This means that the schools which had a clear policy on the use of ICT in teaching learning and were coupled with leadership had a positive direction in technology integration in education.

As for the teachers' perception of ICT, it was rather ambiguous. Some people saw the advantage of using technology while others were more skeptical and suggested that there was a need to train and assist people to use it. Umayma Sulamin from the South expressed frustration, noting, "Lack of skills, lack of training suitable for the needs of the teacher and the profession, preparation takes a lot of time and you are not rewarded." This reflects a broader challenge that many teachers face: even though they understand the advantages of ICT, the lack of training and encouragement from the institution may demotivate or limit their capacity to use it in teaching.

## 6. Discussion

The findings of the study are consistent with the hypothesis that the management of ICT enhances student performance in areas such as English. The quantitative findings revealed that there was a positive and statistically significant relationship between management functions such as organizing (r = 0. 14, p = 0. 03), leading (r = 0. 10, p = 0. 03), and communication (r = 0. 13, p = 0. 05) and student achievement. This means that schools that are effective in the management of ICT through planning, leadership and communication will be in a better position to support and improve students' achievement. In this context, the Technology Acceptance Model (TAM) also aligns with this view as it suggests that usefulness and ease of use are the key factors that influence the adoption of technology (Venkatesh & Davis, 2000).

In particular, planning was identified as having a significant effect on student performance, particularly in Mathematics (Pearson correlation coefficient = 0. 15, p = 0. 02). Of the schools that had planned the integration of ICT in their teaching and learning, identifying the right technologies and ensuring that the teachers had been adequately equipped, these schools recorded improved student performance. This is in accord with other studies where the significance of planning for the long term and the preparation of teachers has been stressed in order to guarantee the effectiveness of ITC (Alper & Hoffman, 2021).

The organization of the ICT implementation process also influenced student achievement in English in a very big way. The study identified that schools which effectively and efficiently and made ICT resources available to teachers for use in teaching produced better results in learning. This is because an effective organization helps in the smooth use of ICT tools and avoids factors that may hinder them such as technical challenges or lack of access, thus improving the students' performance (Blau & Shamir-Inbal, 2017).

Leadership was identified as a key success factor in ICT with leadership having a significant relationship with student achievement in English (r = 0. 10, p = 0. 03). The role of transformational leadership in encouraging and empowering the teachers to change and adopt ICTs is crucial in changing the environment for the use of ICT (Arar & Abu Nasra, 2020). The leaders who offer training on a regular basis and support the trial and error learning of technology make teachers more comfortable with the use of ICT in their teaching. This in turn increases students' interest and performance in the classroom.

When leadership in schools was well supportive and actionable, then the teachers were more likely to incorporate ICT into their teaching. Nonetheless, in the areas where leadership was less engaged, for instance, the southern Bedouin area, the teachers had difficulties because there was no one to turn to and the available resources were insufficient.

Teachers' perception of ICT was favorable where the management of implementation of ICT was appropriate. Appropriate planning, organization and leadership enhanced the

teachers' perception on ICT, which in turn enhanced the students' performance. This implied that schools that were able to support their teachers through provision of adequate professional development and effective communication had a high level of teacher use of ICT in teaching.

Implementation of ICT in the classroom had a positive impact on teacher attitudes provided that the implementation was well managed. Effective organization, efficient management, and effective leadership enhanced teachers' view on ICT that positively influenced student results. This meant that the schools that offered enough support in terms of professional development and clear communication on the use of ICT had increased teacher usage on ICT.

One of the major factors that were highlighted in the study was the importance of communication in the implementation of ICT. The results of this study show that schools that have good communication between the administrators, teachers and parents have higher chances of implementing ICT effectively. The use of clear and effective communication reduces the level of confusion and the levels of resistance to change hence, teachers will be more willing to embrace the new technologies (Badarne, 2019).

Nevertheless, the study also showed that controlling, one of the management functions, is least related to student achievement ($r = 0.07$, $p > 0.05$). However, monitoring and reviewing of Ict cannot have a direct impact on students' achievement as compared to other management functions such as planning and leadership (Cohen, 2019). Control processes have to be also adaptable and coordinated with other management functions to help achieve the right application of ICT in classes.

The qualitative data showed that there is the uneven accessibility of the ICTs within the regions. The schools in the northern region that had better leadership and infrastructure performed better in the use of ICT and the student's performance. Teachers in the northern part said that they received more support and had more access to technological devices, which enabled them to incorporate technology more easily into teaching.

On the other hand, schools in the southern Bedouin area experienced several difficulties, such as; weak school infrastructure, little or no teacher training, and lack of leadership support. This study revealed that teachers in this region faced several barriers which limited the effective use of ICT, and learning achievement in the ICT integrated subjects such as English and Mathematics was poorer than the northern region.

## 7. Conclusion

This study finds that school leadership plays a significant part in determining both students' performance and teachers' perceptions regarding ICT in teaching and learning. The conclusions drawn from both quantitative and qualitative data reveal that planning, organization, and leadership are the most significant factors that contribute to the successful introduction of ICT into schools. Those schools that have clear vision and direction from the leadership, well-coordinated goals and resources in ICT produced better results in student performance especially in areas such as Mathematics that can benefit from technology.

The study also identified significant differences between the northern and southern sectors of Israel; the former had higher indices of ICT use and student achievement than the latter, specifically the Bedouin sector. In the northern schools, the education on the use of I.C.T was more organized and well coordinated due to the enhanced infrastructure and leadership support, in this case both teachers and learners were well exposed to the effective use of the technology. On the other hand, teachers in the southern Bedouin sector had a number of

challenges that hindered their integration of technology in teaching such as lack of resources and culture in using the technology in the classroom.

Teachers' perception towards the use of ICT was dependent on the quality of leadership in the respective schools. Schools that have leaders who are proactive and supportive and ensure that they prepare and equip the teachers and the learners with the necessary tools and training to use ICT developed positive attitudes among the teachers. The findings have implications for integrating transformational leadership's inspirational elements with instructional leadership's direction-giving functions as hybrid leadership. Hybrid models of leadership were characterized by higher levels of teacher use of ICT and thus this type of leadership may be most beneficial in settings where the adoption of new technologies is important.

The qualitative data added more depth to the quantitative data on the basis of how the management practices influence the experiences of the teachers and learners. The teachers pointed out that schools should provide adequate guidance and direction especially in areas which face more difficulties in the aspect of structural development. The interviews showed that where leadership was lacking or not fully involved, teachers had difficulty in implementing ICT into their teaching, and they felt that they lacked confidence and enough resources.

In conclusion, the study shows that it is not enough to focus on the infrastructure development in the integration of ICT in schools; there is the need to focus on leadership practices that would enhance teacher and student involvement. In the case of regions such as the southern Bedouin sector it is very important to have targeted interventions that focus on the lack of infrastructure and cultural barriers to technology. Leadership enhancement, especially through the concept of hybrid leadership models can go a long way in enhancing ICT integration and its resultant benefits to student achievement as well as teacher motivation. Future research should explore long-term strategies for sustaining ICT integration and overcoming regional disparities, with a focus on leadership development and resource allocation.

## 8. Bibliography

[1] Abdelrahman, I., & Salhi, A. Y. (2020). Understanding the factors affecting the adoption of e-learning by teachers from East Jerusalem schools. *Ortadoğu ve Göç*, 10(20), 305-348.

[2] Abu-Asbah, K. (2017). Education and empowerment among Bedouin women in Israel. *International Journal of Educational Development*, 57, 11-20. https://doi.org/10.1016/j.ijedudev.2017.01.003

[3] Abu-Kaf, G., Scheijter, A., & Abu-Jaffar, M. (2019). The Bedouin divide. *Telecommunications Policy*, 43(7), 101810.

[4] Al Shobaki, M. J., & Abu-Naser, S. S. (2017). The requirements of computerized management information systems and their role in improving the quality of administrative decisions in the Palestinian Ministry of Education and Higher Education. *ITEE Journal*, 6(6), 7-35.

[5] Amzaleg, M., & Masry-Herzallah, A. (2021). Cultural dimensions and skills in the 21st century: The Israeli education system as a case study. *Pedagogy, Culture & Society*, 1-21. https://doi.org/10.1080/14681366.2021.1873170

[6] Arar, K. (2014). Leadership for social justice and academic achievements: The case of Arab schools in Israel. *Journal of Educational Administration*, 52(2), 178-196. https://doi.org/10.1108/JEA-02-2013-0027

*Technium Social Sciences Journal*
*Vol. 62, 58-68, October, 2024*
*ISSN: 2668-7798*
*www.techniumscience.com*

[7] Avidov-Ungar, O., & Eshet-Alkalai, Y. (2014). TPACK revisited: A systemic perspective on measures for predicting effective integration of innovative technologies in school systems. *Journal of Cognitive Education and Psychology*, 13(1), 19-31.

[8] Badarne, G. (2019b). The Israeli national program for adapting the education system to the 21st century: The factors involved and the expectations from ICT. *Acta et Commentationes (Ştiinţe ale Educaţiei)*, 15(1), 119-130.

[9] Basri, W. S., Alandejani, J. A., & Almadani, F. M. (2018). ICT adoption impact on students' academic performance: Evidence from Saudi universities. *Education Research International*, 2018. https://doi.org/10.1155/2018/1240197

[10] Blau, I., & Shamir-Inbal, T. (2017). Digital competences and long-term ICT integration in school culture: The perspective of elementary school leaders. *Education and Information Technologies*, 22(3), 769-787.

[11] Cohen, G. (2019). Principals' leadership behaviors that shaped teachers' motivation to implement an educational ICT reform imposed by state authorities in Israel. *Israel Affairs*, 25(3), 554-570. https://doi.org/10.1080/13537121.2019.1593658

[12] Day, C., Gu, Q., & Sammons, P. (2021). The impact of leadership on student outcomes: How successful school leaders use transformational and instructional strategies to make a difference. *School Leadership & Management*, 41(4-5), 213-236.

[13] Eickelmann, B. (2011). Supportive and hindering factors to a sustainable implementation of ICT in schools. *Journal for Educational Research Online*, 3(1), 75-103. https://doi.org/10.25656/01:4683

[14] Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27, 425-478.