Journal of Harbin Engineering University
ISSN: 1006-7043
Vol 44 No. 9
September 2023

Technology Development and Educational Leadership: How Do Arab Students at Higher Education Institutions Perceive the Impact of Technology Development on Educational Leadership in the Arab Sector in Israel?

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Abstract: The traditional approach to education has shifted toward a more technological-focused pedagogy. This new curriculum requires educational leaders to have the necessary skills and knowledge to lead and implement new technology. According to various studies, educational leaders need to be able to integrate technology into their operations and meet the expectations of their students. Information and data are necessary for educational leaders to integrate technology into their operations effectively. Hence, in today's world, technology is very important to the development and teaching of at educational institutions. There is a strong need for educational leaders to use it to enhance their learning and leadership. Therefore, this study was conducted that aimed at to empirically investigate the impact of technology development on educational leadership in the Arab sector in Israel. The survey and interviews were conducted where 400 college students were surveyed and 50 were recruited for the interviews. The study has used SPSS and SmartPLS for empirical analysis but for the interviews analysis, the thematic analysis technique was used in the following study. The findings of the study reveal that attitude towards technology use, leadership practices, leadership role, perception of technology, students' attributes, resource availability, technology availability and technology integration have a positive and significant influence on the educational leadership. Meanwhile, based on the findings of the study intervention study was conducted that also contributed to significantly for enhancement of educational leadership to enhance impact of technological development on educational leadership specifically in Arab sector. The study also provides recommendations and implications at the end.

Keywords: Technology Development, Educational Leadership, technology integration, Arab Sector

1. Introduction:

In today's world, technology is very important to the development and teaching at educational institutions. There is a strong need for educational leaders to use it to enhance their learning and leadership. This study aims to find out how technology can affect educational leadership. It was conducted through a pre-test and post-test procedure. The data collected during the study were analyzed to determine the effects of technology on various aspects of educational institution leadership. The results of the pre-test and post-test studies revealed a change in how educational leaders responded to questions. The findings also indicated that the use of technology could have a positive impact on educational institution leadership.

The results of the study revealed that technology could have a positive impact on educational leadership. It also showed that it could enhance student learning and communication skills. Technology's rapid emergence and evolution have created new opportunities for educational leaders. However, it has also caused them to rethink their strategies and plans. This means they need to develop new skills and strategies to meet the market's demands. Without proper leadership skills, organizations can risk falling behind in the market and experiencing a decline in their market share. Many companies have started to embrace the need for leadership training and leadership experiences (Habiballah et al., 2021).

The traditional approach to education has shifted toward a more technological-focused pedagogy. This new curriculum requires educational leaders to have the necessary skills and knowledge to lead and implement new technology. According to various studies, educational leaders need to be able to integrate technology into their operations and meet the expectations of their students. Information and data are necessary for educational

leaders to integrate technology into their operations effectively. Educational leaders have played a vital role in establishing technology integration in implementing educational institution reforms. Not only are they responsible for leading the implementation of the reforms, but they are also viewed by many as technology leaders.

Some believe that educational leaders need to be knowledgeable about implementing technology to achieve effective integration. Leadership is the most critical factor that can affect the success of educational institution technology integration. Educational leaders are considered effective when it comes to implementing educational institution reforms. They have the necessary skills and strategies to help facilitate the implementation of the reforms. Aside from being knowledgeable about the technology implementation process, educational leaders also use it for various reasons.

For instance, they are involved in developing the new curriculum and can communicate with their students using digital tools. They use it for various reasons. Besides being able to communicate with their students, educational leaders also use it to analyze the data collected by the educational institution. They additionally use it to prepare reports and other professional documents. Educational leaders should also use technology to promote digital learning. Educational institution administrators can help change the traditional practice of teaching and learning by developing new educational software that can challenge the methods used in the classroom (Abdul Razzak, 2018).

They should also encourage their staff members to use technology to evaluate and develop their students' skills through summative and formative assessments. In addition, educational leaders can use it to promote a learning environment conducive to the educational institution's improvement. Unfortunately, there is currently no evidence supporting the effectiveness of educational institution technology integration in Israel due to the lack of empirical knowledge about the various practices and processes involved in implementing the technology.

Previous studies aim to explore how effective educational leaders are in using technology. According to the study of Raman, and Thannimalai (2019), educational leaders should encourage staff members to utilize technology tools to evaluate and develop the skills of their students. They can also promote a conducive learning environment through their use.

There is a lack of empirical evidence supporting Israel's educational institution technology integration. This is because there is only a limited amount of knowledge about the multiple practices and procedures involved in the technology implementation. The study's main objective is to explore how educational leaders can effectively use technology. Educational leaders have treated technology as a minor addition to the regular curriculum in the past few years. This has affected the student's decision-making when choosing study subjects (Badshah, 2019).

The literature revealed that the achievements of Arabic students are lower than those who speak Hebrew. There are still gaps in the achievement of Arabic students and those who speak Hebrew in Israel (Blass, 2017). Moreover, there are a significant achievement gap between the two groups. The main factor that contributes to this gap is the matriculation rate. In 2010, high educational institution students who speak Hebrew achieved a success rate of 59.74%, almost double that of those who speak Arabic. However, a closer look at the figures from the previous year shows that the gap between the performance of students who speak Hebrew and those who speak Arabic is not narrowing. Instead, it is still widening (Hermann, et al., 2021).

There has been a lack of representation of Arab students in higher education institutions since the mid-seventies. For instance, during the academic year 2012, the percentage of Arabs in all academic, administrative, and employment levels was around 1% to 10%. A higher degree leads to a smaller proportion of Arabs. The number of Israeli students who successfully took international examinations is low, but Israel is still considered one of the most educationally advanced countries in the world. Despite this, Arab students still lag when it comes

to attending university. The number of students who speak Arabic has declined. However, this doesn't mean that the Arab community has lost its importance in Israel (Barakat, 2020).

About 20% of Israel's population is composed of Israeli Arabs. They also make up 26% of the country's higher education cohort. Despite this, their participation in the system is lower, at around 12%. The decline in participation rates is linked to varying levels of education. Israel's secondary educational institutions are failing to teach science and technology. Reports also highlighted the country's educational system's shortcomings compared to other countries. Furthermore, although the educational gaps between Israeli students who speak Arabic and those who speak Hebrew are narrower at the secondary educational institution level, they widen after high educational institution. The data suggests that the local improvement in the academic performance of Arabic-speaking students is insignificant if one also considers the jobs they pursue (Haddad Haj-Yahya, et al. 2021).

The goal of this study was to analyse the various factors that affect the academic performance of Arab-speaking students in Israel. It also looked into the gaps when these students leave their studies and enter the workforce. The data collected by the study were organized in chronological order starting from elementary educational institution to higher education. To understand the various facets of the Arab education sector, we should first look into its overall picture. Doing so allows us to identify the multiple challenges that the system faces.

Researchers have recognized the significance of instructive initiative and the board. Various hypotheses and models have been introduced to foster a more viable and effective administration style. These incorporate political, social, and moral authority styles. The objective of these models is to give a structure to fostering a positive chief-supporter relationship inside an instructive establishment. Different educational institutioning systems have introduced different formative and cooperative ways to deal with training administration. These strategies depended on the standards of value and correspondence (Dear, 2017; Carothers et al., 2018).

Problem Statement

Since the establishment of the state of Israel, the education system in the Arab sector is mainly traditional and influenced by social and political. Moreover, it suffers from many serious problems as a result of neglect, discrimination, lack of involvement within the Arab population and inferiority in terms of educational infrastructure and resources. Regarding technology, ICT, computers were introduced into the Arab sector a decade later than in the Jewish sector. Furthermore, curriculums were translated into Arabic and used in schools at the beginning of the 1990s, and a new curriculum was developed in the field of computer literacy. However, there is still shortage in technology integration in the Arabic language, in spite of national and local efforts and there is a lack of tools for developing and assisting educational leadership at educational institutions in the Arab sector in Israel. This study aims to investigate the impact of technology development on educational leadership, thereby giving recommendations for improvement.

Significance of Study

This review aims to collect, document, analyse, and critically examine the various aspects of educational leadership in Arab nations. We will also identify the key weaknesses and strengths of the research literature (Elmeski, 2019). The review found that most studies on educational leadership in the Arab world focused on identifying the patterns of leadership style and orientations and the barriers that educational leaders face when applying certain leadership models. They also analysed and explored the managerial practices and perceptions of leaders. Several theoretical, methodological, and conceptual limitations prevented researchers from effectively analysing and predicting the nature of educational leadership in the Arab world.

This study sought to discover the impact of technology use on the educational leadership in the Arab sector in Israel. One of the main significant points of this study is the unique setting of the Arab

sector of Israel which is on the one had a minority which suffers from discrimination and moralization and on the other had it is composed of many different ethnical groups.

Descriptive, scientifically derived data on the impact of technology use on the educational leadership have been provided through this analysis, and as such have added to the knowledge base of how educational technology, provided an image of the actual reality of technologies and electronic means and their role in teaching for students. In addition, This study contributes to uncovering some of the causes and difficulties that hinder integration of technology in the education system. Furthermore, it contributes to developing recommendations and suggested solutions for how to use electronic means in activating and developing the educational process and the integration of technology in this process.

The Study Methodology (a mixed-method)

Methodology refers to the overall approach or plan of action that is taken in order to conduct research. It includes the specific methods, tools, and techniques that will be used to collect, analyze, and interpret data. The methodology section of a research study is important because it outlines the specific steps that will be taken to ensure that the research is conducted in a systematic and rigorous manner (Bell, Bryman and Harley, 2022). Quantitative research design involves collecting numerical data through structured and objective methods, such as surveys or experiments. The data collected in quantitative research are usually analyzed using statistical methods to identify patterns, trends, and relationships between variables (Zikmund et al., 2022). Quantitative research design often involves a large sample size and the results are usually reported in the form of numerical data, tables, and graphs.

Qualitative research design involves collecting non-numerical data through open-ended and subjective methods, such as interviews or focus groups. The data collected in qualitative research are usually analyzed using thematic analysis to identify common themes and patterns in the data. Qualitative research design often involves a smaller sample size and the results are usually reported in the form of narrative descriptions, quotes, and themes (Hair, Page and Brunsveld, 2019). While quantitative research design is best suited for collecting data on measurable variables, such as attitudes, behaviors, or opinions, qualitative research design is best suited for collecting data on complex and subjective phenomena, such as experiences, perceptions, or beliefs (Blumberg, Cooper, and Schindler, 2014).

In general, the choice between a quantitative research design and a qualitative research design depends on the research questions, hypotheses, and the nature of the data that need to be collected. Both methodologies have strengths and limitations, and researchers often use a combination of both approaches, known as mixed methods, to gain a more comprehensive understanding of the research topic (Sreejesh, Mohapatra and Anusree, 2014). For this study, to determine the impact of technology development on educational leadership at educational institutions in the Arab sector in Israel, a mixed methods research approach would be appropriate. A mixed methods approach involves using both qualitative and quantitative data collection and analysis methods in order to gain a more comprehensive understanding of the research questions and hypotheses.

The quantitative component of the study involves administering a survey to Arab students at higher education institutions in the Arab sector in Israel in order to collect data on their attitudes towards technology use, perceptions of technology, and the availability of necessary resources for technology integration. The survey questionnaire self-administrated and based on the 5-point Likert scale questions (Greener, 2022). The qualitative component of the study involves conducting structured interviews with a subset of Arab students at higher education institutions in order to gain a deeper understanding of their leadership practices, the characteristics that they believe are necessary for effective technology integration, and the needs that they have identified for supporting technology integration in their educational institutions. The interviews would be analyzed

using thematic analysis in order to identify patterns and themes across the responses.

The use of a mixed methods approach would provide a more comprehensive understanding of the research questions and hypotheses than either quantitative or qualitative methods alone. By collecting both quantitative and qualitative data, the study could triangulate the data and provide a more complete picture of the impact of technology development on educational leadership in educational institutions in the Arab sector in Israel (Bell, Bryman and Harley, 2022). The use of both methods would allow for the strengths of each approach to complement each other and would provide a more nuanced and detailed understanding of the research topic.

Results:

Correlation

Table 7 Correlations

Correlations									
	Educational Leadership	Attitude towards Technology Use	Perception of Technology	Leadership Role	Leadership Practices	Principals' and teacher's attributes	Resources Availability	Technology Availability	Technology Integration
Educational Leadership	1	.291**	.100*	.366**	.366**	.701**	.588**	.557**	.549**
Attitude towards Technology Use	.291**	1	.214**	.226**	.226**	.289**	.490**	.536**	.270**
Perception of Technology	.100*	.214**	1	.328**	.328**	.219**	.185**	.143**	.525**
Leadership Role	.366**	.226**	.328**	1	1.000**	.395**	.300**	.328**	.350**
Leadership Practices	.366**	.226**	.328**	1.000**	1	.395**	.300**	.328**	.350**
Administrators' and staff's attributes	.701**	.289**	.219**	.395**	.395**	1	.535**	.450**	.505**
Resources Availability	.588**	.490**	.185**	.300**	.300**	.535**	1	.768**	.339**
Technology Availability	.557**	.536**	.143**	.328**	.328**	.450**	.768**	1	.362**
Technology Integration	.549**	.270**	.525**	.350**	.350**	.505**	.339**	.362**	1

The table presents the correlations between various variables related to educational leadership and technology use. The correlations indicate the strength and direction of the relationship between each pair of variables. Educational leadership has a significant positive correlation with administrators' and staff's attributes ($r = .701$, $p < .01$), leadership role ($r = .366$, $p < .01$), leadership practices ($r = .366$, $p < .01$), resources availability ($r = .588$, $p < .01$), technology availability ($r = .557$, $p < .01$), and technology integration ($r = .549$, $p < .01$). This suggests that educational leadership is positively associated with various aspects of technology use, such as technology integration and availability, leadership practices, and resources availability.

Attitude toward technology use has a significant positive correlation with resources availability ($r = .490$, $p < .01$), technology availability ($r = .536$, $p < .01$), and perception of technology ($r = .214$, $p < .01$). This implies that positive attitudes toward technology use are associated with greater availability of resources and technology (Gogtay, and Thatte, 2017). Perception of technology has a significant positive correlation with technology integration ($r = .525$, $p < .01$), which suggests that a positive perception of technology is associated with greater integration of technology into educational leadership practices. Leadership roles and practices have a significant positive correlation with each other ($r = 1.000$, $p < .01$), which is to be expected given that they are closely related concepts.

Administrators' and staff's attributes have a significant positive correlation with educational leadership ($r = .701$, $p < .01$), which suggests that certain attributes are associated with effective educational leadership in the context of technology use. Resources availability has a significant positive correlation with technology availability ($r = .768$, $p < .01$), which suggests that greater availability of resources is associated with greater availability of technology (Gogtay, and Thatte, 2017). Technology availability has a significant positive correlation with technology integration ($r = .362$, $p < .01$), indicating that greater availability of technology is associated with greater integration of technology into educational leadership practices.

Therefore, the correlations suggest that various aspects of technology use are positively associated with educational leadership practices, such as attitudes toward technology use, perception of technology, resources availability, and technology availability. These findings have implications for educational leaders and policymakers, highlighting the importance of ensuring adequate resources and technology availability to support effective technology integration into educational leadership practices.

The positive correlation between educational leadership and various aspects of technology use, such as technology integration and availability, leadership practices, and resources availability, suggests that educational leaders need to be knowledgeable and supportive of technology use to ensure effective integration into their practices. They should be trained in technology use and encouraged to develop positive attitudes toward it, to ensure that they are able to lead their institutions effectively in the digital age (Cohen et al., 2009). Meanwhile, the positive correlation between attitudes toward technology use, perception of technology, and resources availability indicates that adequate resources and support are critical for successful technology integration into educational leadership practices. Educational institutions should prioritize the provision of resources and support systems, such as training and technical assistance, to ensure that teachers and administrators are equipped to use technology effectively.

The positive correlation between technology availability and integration highlights the need for educational institutions to ensure that technology is available and accessible to all students and teachers. Educational institutions and educational leaders should invest in appropriate technology infrastructure, such as hardware and software, to ensure that students and staff have access to the tools they need to use technology effectively. Therefore, the correlations suggest that effective integration of technology into educational leadership practices requires support and investment in technology infrastructure and resources (Tavakol & Dennick, 2011). Educational leaders should be knowledgeable and supportive of

technology use, and should prioritize the provision of resources and support systems to ensure that technology is integrated effectively into their practices.

Discussion:

In today's society, technology integration in the educational field has become crucial. In order to improve growth, Israel has made tremendous efforts in recent years to advance technology in the educational sector. Israeli policymakers hold the view that technology in education is the answer to both major and minor social issues and that society's problems can be solved through technology. Israel has made two significant changes in recent years to encourage technology in the educational sector (Benzi, 2017).

The COVID-19 pandemic has increased Israel's need for technology in the field of education. Lockdowns and safety precautions had an impact on student's education, which made officials realise they needed to embrace a better technologically supported system of teaching. Additionally, during the pandemic, teachers' opinions of using technology changed, and management shifted to tech-assisted educational institutioning management systems to collaborate and move in tandem with the rest of the world. Contrasting opinions do exist, nonetheless, about Israel's stance towards Arab educational institutions. One of the specialists made the observation that while religion plays a significant role in many of Israel's laws, distinct policies may be created for Arab residents of that country. However, it might not be entirely acceptable given that the state is powerless to change education that violates moral principles. International relations scholars recommend that states adopt situational ethics, always in line with the state's interests, and that occasionally, the minority in any state suffers as a result of those interests (Amzalag, et al, 2020).

Arab students at higher education institutions in educational institutions in Israel view technology use as a crucial component in the education sector. They think that the adoption of technology can boost teachers' commitment to their work and help provide pupils with a high-quality education. Some older teachers, however, may be hesitated to use technology and don't have a fundamental understanding of computer courses. Although technology can promote interactive learning, there are concerns about its adverse effects due to the fact that students who take classes online frequently pay less attention and engage in academic dishonesty. Bad behaviours, such as cheating and bullying by students in the classroom is other problems that teachers deal with, and it can be demoralising. However, technology can help Israel's various religious communities communicate with one another, and it is thought to be a useful tool for unifying groups around a common curriculum. Therefore, it can be said that the Arab educational system in Israel views technology as a useful tool to raise educational standards and foster a better learning environment for students. However, there are some issues that need to be resolved, such as the older teachers' reluctance to use technology, the negative effects of overuse, and problems with student bad behaviours in the classroom. However, the potential advantages of technology are thought to outweigh the drawbacks, and it is thought that technology can promote interactive learning and close the gap between Israel's various religious communities.

Israel has four distinct educational systems: the secular state system, the Jewish religious state system, the Arab state system, and the ultra-Orthodox state system. This division in education contributes to Israel's divided society. Divisions in the social and economic sectors as well as a lack of effective leadership in Israel are results of this division. Israel has been placed fifth in socioeconomic division on an unequal income basis among 34 OECD countries, with Jews in the state earning more on average than Arabs (Haj-Yahya, et al., 2021a). According to experts, incorporating technology into the educational system can aid in bridging the gap between various groups in Israel and promote the development of traits like political tolerance and teamwork that are essential for success and progress. However, there are obstacles to technology integration, such as the Arab educational system's lack of support for Arab teachers and its authoritarian and patriarchal nature. The Ministry of Education should create

policies for the use of technology in all educational institutions, independent of their connection with a particular religion, according to experts who argue that a top-down strategy is required. In order to modify teaching methods, faculty members in educational institutions and colleges also need to have a favourable attitude towards technology and be open to putting it to use.

Technology use in educational institutions and colleges is now standard practise, and many organisations have made significant investments in the field to improve teaching and learning. The successful deployment and integration of technology into teaching and learning is a challenging and demanding issue for educational institutions, hence it has been noted that such investment does not always result in success. Therefore, in order to ensure better implementation and address current issues, it is essential to comprehend the philosophy or purpose of technology use in educational institutions. the value of careful preparation when integrating technology into classrooms, with the Arab educational system in Israel as a case study. It is clear that there are a number of challenges with using technology in Arab educational institutions in Israel, such as the lack of best practises. Therefore, for the successful implementation of technology in the Arab educational system, planning for effective resource utilisation is essential. As a divided society, Israel must make plans for efficient technology integration if it wants to compete with other educational systems.

Conclusion:

In this study, the relationship between educational leadership and technology adoption in educational institutions in Israel was to be looked into. The study's conclusions show that technology integration significantly improves educational leadership, and that this relationship is mediated by a number of variables, including administrators' and staff's attributes, leadership practises, leadership roles, perceptions of technology, and the availability of resources and technology. According to the results of the interview analysis, Arab students at higher education institutions are aware of the value of integrating technology into the classroom and the good effects it may have on educational leadership. However, there are some difficulties and obstacles that must be overcome, such as a lack of tools, knowledge, and assistance in integrating new technologies. The results of the correlation analysis demonstrated a favourable link between the use of technology in education and leadership in that field. This association was further supported by the route analysis results, which also showed that administrators' and staff's attributes, technological integration, and resource accessibility are the best indicators of educational leadership. It is advised that intervention programmes be created to address the difficulties and obstacles to technology integration in Arab educational institutions in Israel in light of these findings. These programmes ought to concentrate on offering tools, instruction, and assistance for integrating technology as well as on cultivating the leadership abilities and habits that make this integration easier. The results of this study have important ramifications for the educational systems in Israel and other nations that have comparable difficulties and impediments in integrating technology into classrooms. The results of this study can help policymakers, educational institution administrators, and teachers create successful plans for incorporating technology into education and enhancing instructional leadership. The findings of this study shed important light on how educational leadership and technology integration interact in Arab educational institutions in Israel. The study emphasises the need of tackling the difficulties and impediments to technology integration and creating practical plans for enhancing instructional leadership.

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