



# Requirements for Digital Leadership Implementation in Indonesian Embassy's Schools in Saudi Arabia in accordance with ISTE Standards

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## ABSTRACT

The purpose of this research was to uncover the reality of digital leadership implementation and to define its requirements in Indonesian Embassy's Schools in Saudi Arabia in accordance with the standards of the International Society for Technology in Education (ISTE). The researcher employed the descriptive survey method to achieve the study's aims, and the questionnaire as a tool for the study, which consisted of (44) phrases separated into two axes (the reality of implementation and requirements), the study population consisted of (101) teachers at the Indonesian Embassy's schools in Saudi Arabia. The following are some of the study's most significant findings: the study participants agree to a (moderately) degree on the reality of the application of digital leadership in Indonesian Embassy Schools in Saudi Arabia in accordance with the standards of the ISTE generally, with an average score of (3.34 out of 5), the study participants agree (very strongly) on the requirements for implementing digital leadership in Indonesian Embassy's Schools in Saudi Arabia in accordance with the standards of the ISTE generally, scoring an average of (4.26 out of 5) on the mathematical scale. The researcher suggests that, in light of the findings, the most crucial course of action be taken: taking advantage of the standards established by the ISTE and making higher authorities informed about them in order to create real national standards for the use of digital leadership for teachers and school leaders, as well as urging higher authorities to adopt one of the international standards for using digital leadership for school leaders and technical competencies for teachers, adopting them in teacher preparation programs, implementing them during professional development while teachers are on the job, and updating them on a regular basis, such as the standards of the ISTE, setting policies, systems, and regulations related to using digital leadership, and defining a system using current technologies at school.

**Keywords:** digital leadership, school leaders, educational technology, ISTE standards.



## Introduction

Since the beginning of the twenty-first century, the world has seen rapid developments in various fields of educational, scientific, social, political, and economics, which have resulted in a radical change in human practices, behaviours, and means of achieving their various goals in line with this tremendous and rapid development, as man cannot live in isolation from it. These advancements are numerous, especially given that the digital era offers current ideas and novel methods of administering organisations, particularly educational institutions. This digital progress requires patterns. Based on this transformation and its consequences, when societies confront issues that necessitate the use of varied, diversified, or various technologies, schools should begin to employ this style of leadership to progressively adjust to the new work environment and the challenges it presents.

School leadership is critical in spreading technology across the school community, and the progress of education is dependent on its capacity to integrate and stay up with innovations in information and communication technology (Al-Ashmawi and Al-Osaimi, 2021). One of its most well-known expressions is digital leadership, which is leadership that uses digital and information communication technologies to carry out administrative tasks electronically. In this scenario, services are rendered automatically without regard to location or time, leading to standardisation of procedures, speedy implementation, lower costs, and the provision of the data and information required to meet the institution's goals with the least amount of time, money, or effort while also improving the quality of administrative processes (Basili, 2022).

According to Al-Rayes and Al-Aifan (2022), digital leadership is "an adaptable leadership approach that integrates change management with the purposeful utilisation of digital resources in educational institutions, empowering school administrators to successfully accomplish the objectives of digital transformation in the classroom." Four pillars constitute the foundation of digital leadership: thinking, method, communication, and managing digital change." Therefore, it is evident that using digital leadership in the classroom may be very beneficial, as it serves as a way to satisfy the needs of school administrators while also assisting them in overcoming obstacles and requiring less work overall.

Ahmed (2022) conducted a study to identify the barriers to the use of digital leadership from the perspective of secondary school principals in the Irbid Kasbah District, and the study produced a set of recommendations, the most notable of which was the need to emphasise the training of principals in particular, and teachers in general, on the use of digital leadership in administrative and technical school work. Al-Kardam's (2020) research also advised the creation of laws, rules, and regulations governing the use of digital technology, as well as the establishment of a system for training programmes and worker assessment to utilise current technology in school leadership. In light of these recommendations to implement the digital leadership pattern in the educational system, particularly in schools, developed world countries have made digitization a way of life, according to the findings of the study by Cahyadi and Magda (2021), which found that the G20 - including Indonesia - has



digital leadership capability in digital readiness, innovation, and competitiveness, and is regarded as a leader in global digitization.

The International Society for Technology in Education (ISTE) is a non-profit, non-governmental organisation based in the USA (Al-Qahtani, 2022). The association has developed a set of standards for school leaders that serve as a guide for all of their technological professional practice, assisting them in improving and developing their professional performance and focusing on teaching, learning, and digital leadership with its variables and transformations. This organisation is one of the world's most well-known educational institutes that is interested in using technology in education (Ibrahim and Shuailiy, 2020).

Hence, this study intends to disclose the reality of the implementation of digital leadership and its requirements the Indonesian Embassy's schools in Saudi Arabia in light of the ISTE standards.

### Study Problem

The Indonesian government, represented by the Ministry of Education and Culture, is interested in digital transformation and believes that it must be integrated into the educational system to fulfil the Indonesian Education Vision 2035 (Yahya and Sukmayadi, 2020). To achieve this vision and improve educational quality, the Ministry has implemented the Indonesian Ministry of Education Law No. 13 of 2007 on school leaders' competencies and Law No. 40 of 2021 on academic qualification and teacher competencies in the use of information and communication technology in education. The enactment of the two laws was intended at enhancing the responsibilities of school leaders to help teachers handle difficulties in the educational process and increase their efficiency (Soeoed, et al, 2021).

While the Indonesian Ministry of Education works to enhance the quality of school leaders, several studies have pointed out a number of flaws and inadequacies in the way that digital leadership is implemented in schools. The Nurdiansyah study (2021) reported that the use of ICT by school leaders is still not well implemented, and that their attitudes, perspectives, and behaviours have not changed for the better regarding technology.

According to Al-Thehli's (2021) study, not every principal working in a school that employs technology conducts digital leadership, but it is about the leadership style and leaders' ability to motivate staff to come up with new ideas. According to the findings of a research conducted by Promsuwan (2019), the primary demand for digital leaders is growth, professional development, and then increasing their skills in the learning space and environment, as well as in the field of communication. The study also proposed a methodology for small school principals to build digital leadership skills.

It should be noted that the researcher applied the study of digital leadership to the Indonesian Embassy's schools in Saudi Arabia based on his observation that the cost spent by these schools for the success of the educational process is high, as well as a lack of use of technology and keeping up with the latest teaching methods, as well as a lack of providing some tools and services to ensure educational quality.



Through analysing literature reviews and within the boundaries of the researcher's knowledge and seeing, he was unable to locate any studies conducted in the Indonesian Embassy's schools in Saudi Arabia directly relevant to the issue. Accordingly In light of the foregoing, the need for the current study has arisen, and the study's problem can be identified by answering the following question: **What are the requirements for implementing digital leadership in the Indonesian Embassy's schools in Saudi Arabia in light of the International Society for Technology in Education (ISTE) standards?**

### Study Questions

The study aims to answer the following question:

1. What is the reality of the implementation of digital leadership in the Indonesian Embassy's schools in Saudi Arabia in light of the ISTE standards?
2. What are the prerequisites for implementing digital leadership in the Indonesian Embassy's schools in Saudi Arabia in light of the ISTE standards?

### Study Objectives

The study's aims are:

1. Examining the implementation of digital leadership in Indonesian Embassy's schools in Saudi Arabia based on ISTE standards.
2. Identify the digital leadership needs for Indonesian Embassy's schools in Saudi Arabia based on ISTE standards.

### Study Significance

Theoretical significance is reflected by:

- Embracing digital leadership as a key tool for developing school leaders' capacities.
- Contribute to diagnosing the realities of digital leadership implementation and establishing the requirements at Indonesian Embassy schools in the Kingdom of Saudi Arabia.
- This study may draw the attention of school officials to raise awareness of the importance of using digital leadership to assist them in properly preparing school staff, which helps them increase teacher efficiency and development, which leads to increased student achievement.
- Improving the resources available in libraries generally, particularly those in Indonesia, about digital leadership.
- The study provides a foundation for future scientific research on the digital revolution of education.

Applied significance is represented by:

- The study's findings help the Indonesian Embassy's educational attaché determine the required conditions for implementing digital leadership.
- Opening the way for interested officials at the Indonesian Ministry of Education's



Training and Development Centre to prepare training programmes on the subject of digital leadership, which school principals can use to better understand digital leadership and its critical role in improving the performance of the school and all of its employees.

- The study's findings are expected to help Ministry of Education decision-makers address the professional development requirements of digital school leaders and to plan and develop the educational initiatives required to improve school leadership's level of qualification and enable it to fulfil its duties in the modern world.
- Make recommendations on how to use modern technology to enhance leadership practices and facilitate efficient communication between school administrators and other stakeholders in the school community.

### Study Limitations

The study's limitations include the following:

**Objective limitations:** The scope of this study was to identify the necessary requirements (physical, human, and training) for the implementation of digital leadership in Indonesian Embassy's schools in Saudi Arabia in accordance with the ISTE standards for Education Leaders in terms of their dimensions.

**Human Limits:** The research comprised all teachers from Indonesian Embassy's schools in Saudi Arabia.

**Spatial boundaries:** This study focused on Indonesian Embassy's schools in Saudi Arabia.

**Time limits:** This study was conducted during the third semester of the academic year 2023.

### Study Terminology

The study discussed a number of terms, each of which is defined as follows:

#### School Leader

According to Al-Dhubyani (2017), the school leader is the first official in the school and oversees all educational, administrative, and social matters. They also set a good example for their colleagues in terms of behaviour and performance.

The researcher defines the school leader procedurally as the official appointed by the Indonesian Ministry of Education to take charge of the activities of the Indonesian embassy school and who possesses the personal attributes and expertise necessary to carry out the responsibilities allocated to him.

#### Digital Leadership

According to Al-Rais and Al-Aifan (2022), digital leadership is an approachable leadership style that blends the ability to drive change with the tactical use of digital resources in schools, empowering school leadership to successfully accomplish the objectives of digital transformation in education. Four pillars form the basis of digital leadership: thinking, method, communication, and managing digital change.



The researcher defines digital leadership procedurally as all the activities and practices planned, organised, implemented, and followed up by the principals of the Indonesian embassy's schools in the Saudi Arabia in order to spread and develop the culture of the digital age and integrate the use of various technical tools in all aspects of the school's educational learning process to achieve the desired goals.

### **International Society for Technology in Education (ISTE)**

Acronymized by the International Society for Technology in Education (ISTE) is a non-governmental, non-profit organization in the USA that delivers exceptional services in the fields of education and technology. It was founded in 1979 (Al-Nafei, 2020).

### **International Association for Technology in Education (ISTE) Standards**

The ISTE in the USA set technical performance standards for school leaders, instructors, trainers, administrators, and students. These standards emphasised teaching, learning, and leadership in the digital era, along with its variables and changes (Ayad, 2017).

### **Theoretical Framework**

One of the key components of scientific research is the theoretical framework, which aids in identifying the background and theoretical frameworks of the literature on the study topic and allows the researcher to recognise concepts related to it. It also gives the researcher information that enables him to draw conclusions, provide answers, and find suitable solutions to the study problem.

### **Part I: Digital Leadership**

#### **The Definition of Digital Leadership**

The definition of digital leadership given by the researcher was: "a process of social impact by information and communication technology to bring about change in attitudes, feelings, behaviour, and performance with individuals, groups, and organisations and that it is virtual relationships of influence" (Chua and Chua, 2017). Digital leadership does not require the leader to be an expert in the upkeep, problem-solving, and use of technology tools and applications. Rather, it only requires the leader to be knowledgeable about the most recent technological advancements in order to assist teachers in utilising these tools and reaping their benefits, which will help the school achieve its objectives more successfully. The days of assigning decision-making authority regarding technological matters to specialists and experts are long gone, as the leader is now required to make decisions regarding the use of technology in the classroom due to its short- and long-term benefits (Abu Hayya, 2021).

The researcher defines digital leadership as the practices and activities planned, coordinated, carried out, and monitored by leaders of Indonesian Embassy's schools in Saudi Arabia. The goal is to foster the growth of the digital age culture and integrate diverse technical tools in all aspects of the educational process to meet the intended objectives.



### **The Significance of Digital Leadership**

In recent years, there has been a growing interest in the study of leadership, its patterns, and its methods of practice, particularly in the field of education, where educational administrative leadership actively contributes to the advancement of departments and institutions of higher learning. Additionally, modern technology has created a new field called digital leadership, which is the fusion of traditional leadership with the abundance of programmes, electronic systems, and social media of various kinds (Al-Juhani, 2018).

The significance of digital leadership is demonstrated by its strategic role in helping employees in educational institutions to streamline administrative processes, expedite decision-making, and enable departments and leaders to plan effectively and efficiently to capitalise on work requirements and deliver high-quality work in accordance with high technical and technical standards that meet deadlines and accomplish goals (Al-Baqawi, 2019).

Al-Harbi (2020) emphasises the value of implementing digital leadership in schools to develop competent educators and professionals and to provide efficient means of enhancing the Arab educational experience. It is also imperative to globalise this experience and offer the relevant cultural context, in addition to implementing qualitative changes in the patterns and service levels of education, disseminating the educational process via the Internet on a larger scale than locally and internally, and staying abreast of issues pertaining to education at all local, regional, and international levels.

The aforementioned makes it clear that digital leadership is essential. According to the researcher, digital leadership is now a necessity rather than a luxury, so the astute leader must recognise the risk he and his institutions face if they fail to keep up with the digital world and use its many tools in the workplace. He must also seize this risk by using it as a chance to further the growth and development of his institutions.

### **Digital Leadership Justification**

The interest in digital leadership and adopting the functional and purposeful use of technology and its products in accordance with a common vision and strategic plan has strong justifications, as several reasons have been cited in the educational literature to justify schools adopting digital leadership, as indicated by Sheninger (2019).

- Increase student involvement.
- Enhancing students' economic viability by promoting cooperation, technical proficiency, and productivity in changing work environments.
- Promoting digital literacy among students.
- Developing 21st century competencies such as critical thinking, creativity, global awareness, communication, information, scientific thinking, productivity, and innovation.

### **Digital Leadership Implementation Phases in Schools**

According to Al-Ammari (2022) and Ahmed (2022), there are several integrated and interconnected phases that digital leadership goes through. These phases are as follows:



- **Phase of administrative documentation**

At this point, educational institutions have established and accepted their horizontal organisational structure, administrative processes, functional duties, powers, and responsibilities.

- **Phase of Leadership Development**

This phase, which is referred to as the "re-engineering" of processes and works within educational institutions, sees the development of administrative procedures from a technological and technical point of view that considers the elements and requirements of digital leadership and makes it easier to create innovative administrative procedures that support digital leadership.

- **Phase of Technical and Technological Development**

This phase concentrates on enhancing, outfitting, readying, and turning on every technological and technical aspect.

The previously mentioned makes it evident that the phases that digital leadership goes through are planned, sequential stages with steps and mechanisms that follow. This shows that digital leadership plays a significant and essential role in developing leadership efficiency and enhancing the administrative effectiveness of digital leaders, as well as in educational institutions and their products.

**Requirements for Implementing Digital Leadership in Educational Institutions**

The implementation of digital leadership in educational institutions demands the development of electronic management practices as well as the availability of a set of prerequisites and pillars that cannot be ignored or dispensed with in order to accomplish effective technological integration. As a result, the implementation of digital leadership necessitates numerous criteria, including physical, human, and training requirements, as noted by Ahmed (2022), Abu Hayya (2021), Al-Juhani (2019), Al Kardim (2016), Haj Ahmad (2016), and Dunston (2016).

● **Physical requirements**

- Adequate funding assistance for digital leadership initiatives.
- Developing strategic plans for achieving digital leadership.
- Availability and support for digital management solutions.
- Ensuring device availability, communication networks, and infrastructure sustainability.
- Ensure leaders and subordinates using digital technology have ongoing assistance for both material and human requirements.

● **Human Requirements**

- Increased understanding among officials about the significance of digital leadership in administration and education.
- Professionals with expertise in digital leadership.
- Clear understanding of digital leadership among leaders, subordinates, and teachers.
- The leader is skilled at strategic planning using information and communication technology.
- Provide subordinates with clear instructions and guidance on digital management



techniques.

- Provide expertise to leaders, instructors, and administrators on virtual teamwork.
- **Training Requirements**
- Providing training to administrative and academic leaders on computer skills and current technology for digital leadership.
- Appropriate funds for training programmes.
- Training programmes are prepared by a specialised staff.
- Training programmes for digital technology professionals are available for both leaders and subordinates.
- Offering specialised digital leadership training programmes.

### **Obstacles to the Implementation of Digital Leadership**

As noted by Basili (2022), Abu Hayya (2021), Al-Juhani (2019), Sheninger (2019), Liliana (2014), and Mingaine (2013), there are a number of obstacles facing digital leadership that must be taken into consideration and worked to overcome in order to achieve the common vision of integrating technology into work. These obstacles include:

- Digital leadership idea lacks clarity and uncertainty.
- Inadequate planning, analysis, and forecasting capabilities.
- Inadequate leadership skills to adapt to the digital age.
- Digital leadership is not supported by a strong organisational atmosphere.
- Employees resist change and stick to familiar routines.
- Rapid technological advancements lead to increased security risks.
- Limited experience in digital leadership.
- Insufficient money for transformation initiatives.

## **Part II: International Society for Technology in Education (ISTE)**

### **A Brief Overview to The ISTE**

International Society for Technology in Education (ISTE) is a nonprofit organization that works with the global education community to accelerate the use of technology to solve tough problems and inspire innovation. Our worldwide network believes in the potential technology holds to transform teaching and learning. As schools around the globe moved learning online during the COVID-19 pandemic, ISTE is committed to curating resources to help teachers, leaders, professors and parents use technology to keep the learning going.. This provides a comprehensive roadmap for effective use for technology in schools around the world (UNESCO, 2023).

The ISTE is one of the most important international organisations concerned with developing education and propelling it forward through innovative and effective use of technology, establishing learning standards, and providing a roadmap for global digital age skills that benefit students, teachers, administrators, and educational leaders. Its membership comprises over 300,000 expert and young educational leaders from across the world, as well as a huge number of education-related groups and institutions that collaborate with it (Al-Tafah, 2015).

Through the innovative and effective use of technology, and the development of



global educational standards for the teaching and learning process, the association is concerned with developing the educational system, pushing it towards future prospects, and drawing a roadmap for the knowledge and capabilities of the digital knowledge age. It has a bold vision to rethink the development of the educational and learning process and create innovative educational environments by supporting the initiative or project of ISTE standards for educational technology for students, teachers, administrators, technology trainers, and computer science educators (Cooper, 2015).

### ISTE Standards

For over 20 years, ISTE standards have been applied, examined, and revised to consistently represent the most recent research findings that define effective use of technology for instruction, training, leadership, and learning. Every state in the United States as well as several other nations have ratified the standards (ISTE, 2023). ISTE standards include a wide range of topics, including teachers, trainers, students, and school administration and leadership (ISTE, 2023).

### ISTE For Education Leaders

The ISTE standards, in particular, provide responsible education leaders with guidance on how to enhance learning, build technologically advanced learning environments, and enable them to spearhead the change of the educational landscape. (ISTE, 2023).

In this regard, Domeny (2017) explains that using the ISTE Education leaders have the ability of leading schools in the appropriate path towards restructuring in order to stay up with a society that is always changing. The additional goals of these guidelines are to ensure that school leaders are aware of their new technical responsibilities, to meet all beneficiaries' technological demands, and to fully integrate technology into the teaching and learning process. Lastly, in light of changes in educational policy, the ISTE standards for leaders in education (Domeny, 2017).

The updated standards for the five categories for 2018 are as follows: equity and citizenship advocate, visionary planner, empowering leader, system designer, connected learner. Here is a detailed discussion of them:

1. **Equity and Citizenship Advocate** means that leaders use technology to increase equity, inclusion, and digital citizenship practices. Education leaders:

- Ensure all students have skilled teachers who actively use technology to meet student learning needs.
- Ensure all students have access to the technology and connectivity necessary to participate in authentic and engaging learning opportunities.
- Model digital citizenship by critically evaluating online resources, engaging in civil discourse online
- Cultivate responsible online behavior, including the safe, ethical and legal use of technology.

2. **Visionary Planner**: It means that leaders engage others in establishing a vision, strategic plan and ongoing evaluation cycle for transforming learning with



technology. Education leaders:

- Engage education stakeholders in developing and adopting a shared vision for using technology to improve student success, informed by the learning sciences.
- Build on the shared vision by collaboratively creating a strategic plan that articulates how technology will be used to enhance learning.
- Evaluate progress on the strategic plan, make course corrections, measure impact and scale effective approaches for using technology to transform learning.
- Communicate effectively with stakeholders to gather input on the plan, celebrate successes and engage in a continuous improvement cycle.
- Share lessons learned, best practices, challenges, and the impact of learning with technology with other education leaders who want to learn from this work.

3. **Empowering Leader:** Leaders create a culture where teachers and learners are empowered to use technology in innovative ways to enrich teaching and learning. Education leaders:

- Empower educators to exercise professional agency, build teacher leadership skills and pursue personalized professional learning.
- Build the confidence and competency of educators to put the ISTE standards for students and educators into practice.
- Inspire a culture of innovation and collaboration that allows the time and space to explore and experiment with digital tools.
- Develop learning assessments that provide a personalized, actionable view of student progress in real time.

4. **System Designer:** Leaders build teams and systems to implement, sustain and continually improve the use of technology to support learning. Education leaders:

- Lead teams to collaboratively establish robust infrastructure and systems needed to implement the strategic plan.
- Ensure that resources for supporting the effective use of technology for learning are sufficient and scalable to meet future demand.
- Protect privacy and security by ensuring that students and staff observe effective data management and privacy policies.
- Establish partnerships that support strategic vision, achieve learning priorities and improve operations.

5. **Connected Learner:** Leaders model and promote continuous professional learning for themselves and others. Education leaders:

- Set goals to remain current on emerging technologies for learning, innovations in pedagogy and advancements in the learning sciences.
- Participate regularly in online professional learning networks to collaboratively learn with and mentor other professionals.
- Use technology to regularly engage in reflective practices that support personal and professional growth.
- Develop the skills needed to lead and navigate change, advance systems and promote a mindset of continuous improvement for how technology can improve learning.

In this chapter, the researcher discussed the concept of digital leadership, its



significance, and the requirements for improving school leaders' technological competencies to keep up with the digital age and invest successive technological innovations in achieving the school's goals. She also discussed how to increase everyone's involvement in the educational process by having everyone develop a vision for integrating technology into the school and create the strategic plan to realise this vision.

### Literature Review

The researcher looked at various literature reviews, selected several earlier studies that were related to the study's issue, organised them chronologically from the newest to the oldest, and performed an analysis. The analysis included a comparison of the prior and current research' advantages and drawbacks, as well as an examination of their parallels and contrasts. The presentation of literature reviews is as follows:

A research by Iraqi (2023) examined how digital leadership might help instructors who interact with students who have special needs become more socially efficient. The Qalyubia Governorate's special needs schools provided a sample of 120 instructors for the study. The Digital Leadership Scale and the Social Competence Scale were used as research instruments in this descriptive study. In the context of the Fourth Industrial Revolution, the research sample's opinions indicated that there was a favourable association between social efficiency and digital leadership. According to the findings, the research made a number of suggestions, with a focus on motivating special education school administrators to spearhead change.

Ahmed (2022) studied obstacles to digital leadership implementation from the perspective of secondary school administrators within a particular brigade. A sample of 135 principals were given a questionnaire with 20 items as part of the study's descriptive methodology. The study's high overall hurdle rating of 4.07 indicated that there are substantial barriers to the use of digital leadership. Additionally, depending on years of experience in school administration, the study discovered statistically significant variations, demonstrating the influence of experience on human barriers. The study's conclusion advocated for the need of training, especially for principals and instructors in general.

Another research published by Al-Ammari in 2022 assessed the level of digital leadership practice among secondary school administrators in Khamis Mushait Governorate. The study used a survey technique, with a questionnaire distributed to a group of 40 principals. The study's findings revealed that principals engaged in modest levels of digital leadership practice. The study found a large amount of practice in the innovation component of digital leadership, as well as a high level of knowledge of digital leadership. The research ended by suggesting the formation of specific goals for digital leadership practices in the governorate's secondary schools, with a focus on communicating these goals to all school staff members.

The professional development requirements of Saudi Arabian school administrators in regard to digital leadership were investigated in a study done in 2022 by Al-Rayes and Al-Aifan. 362 school leaders from various departments of education were given questionnaires as part of the study, which used a descriptive survey methodology. The



results showed that, in terms of many facets of digital leadership, the research sample had a modest degree of need for professional growth. In areas including managing digital transformation, thinking, technology, and communication, the research emphasised the need of concentrating on professional growth. A number of suggestions were made to improve school leaders' digital leadership abilities and address the requirements that were identified.

Abu Hayya performed a research in 2021 to assess the level of digital leadership practice among UNRWA (United Nations Relief and Works Agency) school principals in Palestine's southern governorates. The study took a descriptive analytical method and included 522 instructors from UNRWA schools. According to the data, UNRWA school administrators displayed an average level of digital leadership practice, as seen by their instructors. The study also found statistically significant variations depending on the educational zone variable, with principals from northern Gaza and central educational zones doing better. The report ended by advising that the UNRWA Education Department host a scientific conference where school principals may exchange best practices in technology use with their colleagues from other schools.

A model for digital leadership development among small-school principals under the Office of the Basic Education Commission was created in 2019 by Promsuwan and associates. Their study included a mixed-methods approach, including focus groups with nine experts, questionnaires given to 385 principals, and expert interviews. The primary conclusions highlighted the necessity of professional development for digital leaders and the significance of improving proficiency in the areas of communication, the environment, and learning. The research put up a plan for small-school principals to follow in order to acquire digital leadership competencies.

Yusof and colleagues performed a 2019 study to measure and define digital leadership among Malaysian school leaders. The study used a descriptive survey technique, with data collected via a questionnaire distributed to 352 principals or heads of elementary and secondary schools. The data was analysed using Structural Equation Modelling (SEM), yielding a measuring model for digital leadership that included two variables (communication and school atmosphere), nine job titles, and 42 digital leadership behaviours in schools. The model laid the groundwork for future study on digital leadership among school leaders, allowing for additional testing and adjustment of the proposed dimensions, combinations, and indicators.

Moore performed a 2018 study on teachers' opinions of principal digital leadership behaviours that influence classroom technology use. The study used a qualitative method, with data collected through interviews and a related study. The purposeful sample consisted of 24 instructors who taught English, language arts, reading, or mathematics in classrooms equipped with technology. The survey found that teachers believed numerous digital leadership behaviours of administrators had a substantial impact on technology use in the classroom. These behaviours included offering professional development opportunities for staff, encouraging a good attitude towards technology, modelling successful technology integration, and assisting teachers in implementing technology-rich curriculum. The research concluded by advising that



principals get continuing professional development to improve their digital leadership abilities and foster a conducive atmosphere for technology integration in schools.

These studies, taken together, provide light on a variety of aspects of digital leadership in education. In addition to evaluating school principals' use of digital leadership, they look into the connection between social efficiency and digital leadership, pinpoint implementation obstacles and assess the professional development requirements of educational leaders in the genre. The findings highlight the significance of digital leadership in fostering technology integration and boosting educational outcomes. The recommendations made in these studies are important for schools and educational systems looking to improve digital leadership capabilities among their leaders.

The present study derived several benefits from literature reviews, chief among them being the establishment of a conceptual foundation for the topic, the enhancement of the theoretical framework, and the formulation of the research problem and inquiries. As well as benefiting from the scientific references on which these studies were based.

From the researcher's point of view, the current study stands out since it is one of the few in the field and one of the first local studies in Indonesia to cover the issue of digital leadership. It was also characterized by the location of its application, which was in the schools of the Indonesian embassy in Saudi Arabia, where no studies had before been undertaken, according to the researcher's understanding.

## Methodology

The descriptive survey approach is the most appropriate method for this study given the problem and the questions it addresses. It is suitable for the study's nature and goals, and it is defined as "the type of research that is carried out by questioning all members of the research community or a large sample of them, with the aim of describing the studied phenomenon in terms of its nature and degree of existence only, without going beyond that to study the relationship or deduce the reasons" (Al-Assaf, 1416, p. 191).

Based on the nature of the study and its aims, the questionnaire was chosen as the best method for gathering data and information from the study population. The questionnaire was selected because it was acceptable for the methods employed, was the quickest and most appropriate way to contact respondents, and performed well in tabulation and analysis.

The research population included all 101 instructors who worked at the Indonesian Embassy Schools in Riyadh, Jeddah, and Mecca. Due to the limited study population, the researcher used the complete census approach, which involved applying the study instrument to the full study population. Following field application, 101 questionnaires suitable for statistical analysis were acquired.

In order to characterise the study participants, several important variables were determined, such as gender, academic background, employer, and years of service. These variables not only reflect the participants' scientific backgrounds but also serve as a basis for the various analyses that are related to the study. The specifics of these



variables are as follows:

Based on gender, the data clearly shows that the majority of the study subjects are females (61.4%), while the ratio of men is 38.6%.

Based on academic background, the data shows that (77) instructors from the study subjects have a bachelor's degree, which represents (76.2%) of the total study subjects, while (19) teachers have a postgraduate degree, accounting for 18.8%. Finally, there are five instructors with only a high school education.

Based on employer, the data shows that there are (43) teachers from the study subjects whose employers are the Indonesian School in Jeddah (42.6%), (30) teachers whose employers are the Indonesian School in Makkah (29.7%), and (28) teachers whose employers are the Indonesian School in Riyadh (27.7%).

Based on years of service, the data shows that the majority of study participants, or (47) out of all study subjects, had fewer than three years of work experience. These study subjects make up (46.5) of the total study subjects. However, (36) of them indicate that (35.6%) of them have worked for a company for longer than six years. Lastly, (18) of them, or (17.8%) of the total, indicate the years of service in work ranging from three to fewer than six years.

The following approaches are used to validate the questionnaire instrument:

- The study instrument's apparent validity: The questionnaire was created by the researcher and was then given to a group of experienced academic scientists and knowledgeable experts in educational administration in its initial form. Their assessments confirmed the questionnaire's suitability for the study's objectives, confirmed the measurement of the study's axes phrases, and confirmed the language's integrity. Based on their observations, an amendment was made.
- The Pearson correlation coefficient is used to assess the internal consistency of each axis phrase and all assertions inside it. It turns out that the correlation coefficients of each phrase with its axis are positive and statistically significant at the significance level (0.01) or less, indicating the sincerity of the internal consistency between the statements of the first axis, the total degree of the axis, and their suitability to measure what they were intended to measure.
- The study's reliability has been verified by the use of the Cronbach's Alpha coefficient, which is used to quantify the degree of stability and discern the difference between the reliability axes and the total variance. In the study's field application, it comes out that the general stability coefficient was (0.96), indicating a good level of dependability for the resolution.

## Results and Discussions

The study yielded a number of findings:

The following are the findings for **the first question**: The survey respondents agreed with the reality of the implementation of digital leadership at the Indonesian Embassy's Schools in Saudi Arabia in light of the ISTE criteria in general, getting an approval score (medium) with an arithmetic average of (3.34 out of 5). The results revealed that the most apparent reality of the implementation of digital leadership in the Indonesian Embassy's Schools in Saudi Arabia in light of the ISTE standards was



the dimension (empowerment) with a high level of acceptance. While it was ranked second after (equity and citizenship) with a high level of acceptance. It came in third place after (systems and procedures), with a medium level of acceptability. It ranked fourth after (support and contact) and received middling approval. It came in fifth and last position after (planning) with a modest level of acceptance..

This finding is similar with the findings of the Al-Rais and Al-Aifan studies (2022), which revealed that school leaders in Saudi Arabia had modest professional development requirements in the context of digital leadership. According to the Abu Hayya research (2021), the degree of digital leadership practice among UNRWA school leaders in Palestine's southern governorates is average, as seen by their instructors. However, this conclusion differs with the findings of Ahmed's (2022) study, which discovered that secondary school administrators in the Kasbah District face significant barriers to implementing digital leadership. According to the findings of Al-Ammari's (2022) study, secondary school principals in Khamis Mushait Governorate demonstrate a high level of digital leadership practice.

The first dimension, Equity and Citizenship, has a high level of agreement among respondents. The most essential sentences, listed ascending by arithmetic average, are as follows:

Gives instructors equal opportunity to use the technological tools available in the school to help them do their jobs. Then installs signboards in the school to promote the use of technological tools. Also provides health and safety guidelines for students and staff when using technology at school.

The second dimension: Planning, the most crucial terms, which are listed in ascending order based on the arithmetic average and agreed upon by the research participants to a (medium) degree, are as follows: In an effort to aid other schools, he disseminates best practices for using technology in his institution to their leaders. Also, creates a strategic strategy to carry out the agreed-upon goal of incorporating technology into the classroom. Then, regularly evaluates how well the strategic strategy for integrating technology into the classroom is being implemented.

The third dimension: Empowerment, the survey participants exhibit a high degree of agreement on the dimension of empowerment. The arithmetic average of the most significant phrases indicates that they are placed in increasing order: When making a choice, pays attention to what teachers have to say, discusses it, and takes it into consideration. Then, enables educators to interact using the digital tools of their choice, such WhatsApp groups. Also, it uses social media platforms like Facebook and WhatsApp to educate instructors about digital content.

The fourth dimension: Systems and Procedures, the survey respondents agree to a (medium) degree on the distance (systems and procedures), and the most essential terms, sorted ascending according to the arithmetic average, are: Utilises technology and current curriculum to assess teacher effectiveness during teaching and learning processes. Also, coordinates with authorities to maintain technology tools and provide enough Internet speed for school instructors. Then, encourages instructors to participate in curricular computerization and create digital products to enhance student learning.



The fifth dimension: Support and Contact, The survey respondents agree to a (medium) degree on the distance (support and communication), and the most essential terms are listed below in increasing order based on the arithmetic average: The programme provides instructors with access to digital technology professionals. Also, provide instructors with digital assets for professional development, including documentation and videos. Following that, It offers professional assistance to instructors through technological platforms like social media and email.

In conclusion, the study's findings reflect the level of digital leadership in the Indonesian Embassy's schools in Saudi Arabia, as measured by ISTE standards. Participants in the survey agreed that digital leadership was implemented moderately, with variances seen across several dimensions. These findings advance our understanding of digital leadership practices and can guide future attempts to improve digital leadership abilities in educational contexts.

The following are the findings for **the second question**: The study participants strongly agree with the requirements for the implementation of digital leadership in the Indonesian Embassy's Schools in Saudi Arabia, based on the ISTE Standards. The overall approval rating for these requirements is very high, with an average score of 4.26 out of 5. The study identifies three dimensions of requirements: material requirements, human requirements, and training requirements.

In terms of material requirements, the study participants strongly agree on the importance of strengthening the department's ICT infrastructure, including hardware, software, and networks. They also emphasize the need to provide material and moral incentives to encourage staff to integrate technology into their practices. Additionally, having a strategic plan for the gradual transition to digital leadership is seen as crucial.

Regarding human requirements, the study participants strongly agree that leaders should inspire confidence in their subordinates' ability to apply digital leadership. They also emphasize the importance of fostering a culture that embraces digital leadership and ensures that subordinates have confidence in their leaders.

In terms of training requirements, the study participants strongly agree on the need to identify training needs for digital professional development among the school's staff. They highlight the importance of having an appropriate budget to support training programs and a certified training team that can help develop the necessary skills for digital leadership.

These findings are consistent with prior studies. For example, Ahmed (2022) found that secondary school principals in the Kasbah District faced significant obstacles to implementing digital leadership. On the other hand, Al-Ammari's study (2022) concluded that secondary school principals in Khamis Mushait Governorate exhibited a high degree of digital leadership practice. The study by Promsuwan et al. (2019) also found high leadership needs among school principals.

However, these findings differ from the study by Al-Rayes and Al-Aifan (2022), which identified moderate professional development needs among school leaders in Saudi Arabia regarding digital leadership. Additionally, Abu Hayya's study (2021) concluded that the degree of digital leadership practice among UNRWA school



principals in the southern governorates of Palestine, according to their teachers' perspectives, was average.

Overall, the study's results provide valuable insights into the requirements for implementing digital leadership in the Indonesian Embassy's Schools in Saudi Arabia. By addressing material, human, and training requirements, educational leaders can enhance their digital leadership competencies and drive positive change in their schools.

### Conclusions and Recommendations

In light of the results, the researcher suggests that the following tactics be put into practice in Indonesian schools to encourage digital leadership:

First and foremost, it is advised to make use of the ISTE standards and present them to higher authorities. This would entail promoting the acceptance of these standards and bringing them before the appropriate authorities in order to create real national standards for teachers' and school leaders' use of digital leadership. Secondly, the use of digital leadership in schools needs to be governed by thorough policies, guidelines, and procedures. Moreover, it is necessary to build a system for staff assessment and training programmes to guarantee the efficient use of contemporary technology in educational environments. In order to promote a more widespread culture of digital leadership, the researcher suggests creating a customised handbook written in Indonesian. This manual would define digital leadership, outline its goals, and describe how it's used in educational environments. By sharing this handbook, educators' knowledge and comprehension of digital leadership will grow.

To provide school principals with the essential abilities, it is advised that the importance of technical skills be emphasised at their appointment. Making technological capabilities a precondition allows schools to verify that principals are capable of efficiently implementing digital leadership practices while also minimising the school's administrative load. Training programmes for school leaders and instructors should be planned with a focus on the ISTE's KPIs. These courses would attempt to improve digital leadership techniques, such as implementing digital leadership in the field of education.

Furthermore, the school administration should organise a variety of training courses to ensure that instructors have equitable possibilities to use the current digital tools in schools. Teachers' expertise in using technology for educational purposes can be improved by providing technical skills courses. To promote and reward individuals who successfully apply digital leadership, monetary and moral incentives should be provided. Furthermore, an application performance monitoring system might be used to assess the effectiveness of digital leadership efforts such as financial incentives or electronic gadgets.

Educating people about international standards is essential to fostering digital leadership in the classroom. This may be accomplished by holding seminars and workshops that instruct teachers and school administrators on the ISTE standards and how to successfully implement them. Financial resources must be set aside to fund the creation of training programmes, as well as the supply and upkeep of tools, hardware,



and software required for digital leadership implementation and information security. Finally, it is important to keep educators and school administrators up to date on the latest technology advancements in the classroom so that they may consistently improve their knowledge and abilities. Participating in forums, seminars, and conferences aimed at advancing technology integration in education may foster professional development and improve the execution of digital leadership methodologies.

### Recommendations for future studies

The researcher made the following suggestions for future research:

- Conduct research on the impact of digital leadership on innovation in Indonesian education.
- Comparing the current study's findings to those of another study on the conditions for implementing digital leadership in Indonesian Islamic institutions and schools.
- Perform a study like to the current one on other Indonesian academic levels and industries, and contrast the findings with those of this study
- Studying digital leadership from an analytical and assessment perspective in Indonesian education colleges' teacher training programmes.
- Undertaking research on the implementation of digital leadership in Indonesian embassy schools, taking into perspective Saudi Arabia's educational background, and comparing the findings with those of the present research.

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