# A Proposed Perspective for Developing Educational Supervision in Egypt in the Digital Era

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## Abstract

Educational supervision in the digital era plays a vital role in facilitating the professional development of teachers. The digital transformation has provided educational supervisors with enhanced opportunities to overcome geographical constraints and reach targeted teachers more efficiently. This research aimed to explore the current status of educational supervision in Egypt in the context of the digital era, as perceived by educational supervisors. It further sought to identify the key obstacles hindering the advancement of digital educational supervision and to identify effective mechanisms for its development. A proposed perspective was provided to support supervisors in enhancing their use of technology within educational settings. The research utilized the descriptive survey method. The exploratory sample for the research included 188 educational supervisors, while the final sample for the research amounted to 377 supervisors. A structured questionnaire was employed to identify supervisors' views regarding the efforts made in the field of educational supervision, the obstacles encountered, and the proposed mechanisms for improvement. The research used the Chi-square test ($\chi^2$) to identify differences in the responses of the research participants. Findings revealed statistically significant differences at the 0.01 level in participants' responses across all components and the overall questionnaire score, in favor of those who responded "*Agree*." The research concluded with a proposed perspective and recommended the integration of digital technologies into educational supervision practices as a means to optimize time, effort, and cost.

**Keywords:** Digital educational supervision, Digitization, Digital era.

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## Introduction

Digitalization in the 21st century has transformed various sectors, including education. The use of digital technologies in education has increased significantly in recent years, driven by changes in work styles and lifestyles that have undergone rapid transformations. This shift has necessitated equipping education professionals with updated technological knowledge and skills to keep pace with continuous technological innovations and new developments in the digital world. Estimates suggest that technological skills need to be updated every three years to remain relevant. It is not sufficient to merely update technological knowledge and information; it is equally essential to continually upgrade the technological skills of those working in the fields of education and learning, while consistently evaluating their quality and reliability.

To keep pace with the requirements of the digital era, continuous professional development is crucial for educators to acquire and continually update their skills in digital technology utilization. This adaptation is essential for addressing the diverse learning needs of students, necessitating educators to innovate their pedagogical practices and adopt contemporary methodologies that align with these requirements (Ibrahim & Attia, 2024). This is closely linked to the educational supervision process.

Educational supervision in the digital era has become a critical and essential factor in achieving and sustaining the professional development of teachers. The digital era has empowered educational supervisors to overcome geographical barriers more effectively and to reach targeted teachers with greater speed and precision. Furthermore, the digital revolution has dismantled traditional geographical constraints, facilitating seamless global communication. Today's generation of teachers and learners seeks assistance online as readily as they consult traditional sources for answers to their queries. In response, Ministries of Education in many countries have established online communities for like-minded learners and developed platforms that connect geographically separated supervisors and trainees. This evolving landscape of educational supervision is well-documented in previous studies (Butterworth, & Zimmerman, 2011; Gottlieb et al., 2017; Pillon & Osmun, 2013; Störmann, Von Der Borch & Dimitriadis, 2010 and Weiner et al., 2014).

## Research Problem

Despite the significant efforts exerted by the Ministry of Education and Technical Education in Egypt to develop the educational system—particularly in the area of educational guidance and supervision through the integration of technological tools to save time, effort, and costs—there are still prevailing challenges in this domain. These challenges are manifested in the continued dominance of traditional methods of educational supervision, while electronic supervision practices occupy only a limited space in the interests of educational supervisors.

In this context, Ahmed's study (2021) revealed the inadequacy of the traditional supervisory style in supporting the educational process, the weakness of the relationship between the educational supervisor and the teachers, the supervisor's lack of interest in providing diverse professional development opportunities for teachers, the lack of freedom to

choose the supervisory style appropriate for them, and the limited role of the supervisor in planning, guidance, follow-up, and evaluation.

In addition to the previously mentioned shortcomings in the educational supervision system, the results of Ahmed's study (2021a) showed that there are incorrect practices prevailing in traditional educational supervision programs regarding their methods, approaches and tools.

Consequently, there is a pressing need for the concerted efforts of relevant stakeholders to develop educational supervision practices in line with the demands of the digital era.

Thus, the research addresses the following questions:

1. What are the theoretical foundations of educational supervision?
2. What is the current state of educational supervision in Egypt in the context of the digital era?
3. What is the proposed perspective for developing educational supervision in Egypt in the digital era?

**Research Aims**

The current research aims to:

1. Identify the current state of educational supervision in Egypt in the digital era from the perspective of educational supervisors, and determine the essential characteristics required of supervisors in the digital era.
2. Identify the key obstacles hindering the development of educational supervision in the digital era.
3. Identify mechanisms for developing educational supervision in the digital era.
4. Provid a suggested perspective that could assist educational supervisors in Egypt in improving their use of technology in education.

**Research Importance**

The importance of this research lies in two primary dimensions:

- The **theoretical importance** stems from addressing a relatively new topic that has not been extensively explored in previous studies conducted in Egypt, which may contribute to enriching educational literature in this field.
- The **practical importance** of the research centers on several aspects, foremost among them supporting the integration of technology in education, thereby enhancing the effectiveness of achieving learning outcomes. Moreover, the research also may play a role in informing educational policies related to technology by helping to identify the strategies and resources necessary for integrating technology into educational supervision. Besides, the proposed perspective may help to bridge the gap between theoretical knowledge and practical implementation. It offers a strategic guide for policymakers and educational leaders to enhance digital readiness, and elevate the overall quality of educational supervision in the digital era.

## Research Key Terms

The research adopted the following terms:

- **Digitization**

Digitization refers to the process of converting traditional activities and operations into digital formats. It represents a fundamental shift in how organizations and societies function, playing a vital role in fostering innovation, improving efficiency, and enhancing competitiveness in the marketplace through the use of digital and informational technologies, which contributes to improving operations and providing services faster and more accurately. It encompasses a wide range of activities, such as optimizing traditional processes, enhancing user experiences (Hughes & Burke, 2014), conducting data analytics and forecasting, fostering new service development, and strengthening communication and interaction among individuals and institutions through social media platforms or dedicated applications (Sheredekina et al., 2021).

- **The Digital Age**

The digital age refers to the era characterized by the widespread development and dissemination of digital technologies across various aspects of daily life, as well as economic, social, cultural, and educational activities. This period is generally marked with the acceleration of technological innovations and the growing reliance of communities and institutions on electronic devices and digital networks. The digital age is distinguished by several key features, including the comprehensive accessibility of information, shifts in economic practices and business management, social and cultural transformations, changes in education and training, and the transition towards a digital economy (Saykılı, 2019).

- **Digital Educational Supervision**

The current research defines educational supervision in the digital era as the use and application of educational technology by educational supervisors to improve education, develop teachers' skills, and enhance teaching processes, overcoming geographical and social obstacles with the aim of saving time, effort, and costs, and achieving quality.

## Literature Review

### First: The Concept of Educational Supervision

Educational supervision is defined as a process of organized communication and cooperation between the educational supervisor and the teacher through a set of deliberate activities that exchange opinions and ideas, analyze the educational situation with all its elements, and identify and solve the teacher’s problems to improve the educational process and achieve educational goals (Ahmed, 2021). Educational supervision encompasses all organized and continuous collaborative activities undertaken by supervisors with the aim of enhancing and developing teachers’ instructional skills, ultimately contributing to the achievement of educational objectives (Al-Shahri, 2024).

Educational supervision is therefore a technical process carried out through continuous communication between supervisors and teachers with the aim of improving teachers' technical and professional skills, which is reflected in their professional performance and contributes to improving the educational process.

In the context of digital transformation and reliance on modern technologies in all fields, many studies highlighted the importance of integrating technology into educational supervision, recommending the expansion of digital or electronic educational supervision practices, providing appropriate training for supervisors and teachers, developing a supervisory culture that embraces digital technologies, establishing appropriate technological infrastructure, and addressing challenges related to unequal access to technology and the conflict between traditional and modern technological values. This can be illustrated through the following sections.

**Second: Educational Supervision in the Digital Era**

The global expansion towards a digital economy requires individuals to possess digital skills to achieve success in work and life. Therefore, digital skills have become essential in all sectors, including education, guidance, and educational supervision. The educational supervision process seeks to keep pace with the global digital transformation by providing educational supervisors with digital skills, in addition to the intrinsic competence or efficiency that enables them to employ and integrate technology into the educational supervision process (El-Din, & Al- Qurainiyah, 2024).

Fadl and Al-Amri's study (2022) indicated that electronic supervision is an urgent necessity in light of the technological progress we are experiencing in the current era and its direct connection to the quality of the performance of educational supervisors.

In this context, electronic or digital supervision can be referred to as a modern approach of utilizing internet technologies and information and communication tools in supervisory work, thereby reducing time, effort, and cost while achieving higher efficiency and ensuring continuous communication between supervisors and teachers, which helps to elevate their performance levels (Bani Younes, 2024). It's a style of supervision using electronic communication mechanisms such as computers, internet networks, and its various media of audio, video, graphics, search engines, and electronic manuals, as well as internet portals, whether remotely, in supervision centers, at school, or in the classroom, with the aim of conveying and exchanging information and experiences between teachers and the supervisors in the shortest time, with the least effort, and with the greatest benefit, which contributes to providing learning, advice, encouragement, promotion, and unlimited modeling. It differs from traditional educational supervision that takes place face-to-face (Ismail, 2018).

The primary aim of digital supervision is to assist individuals achieve their educational and professional goals, develop their skills and capacities, and enhance their academic and professional performance. This is achieved by providing individual and group with support, academic and professional guidance (Horn and Stacker, 2017), providing educational resources, developing educational programs, organizing training courses and workshops, and monitoring progress and evaluating performance (Casella and Gregory, 2014).

This indicates the importance of integrating technology and its tools into the educational supervision process, the need for supervisors to employ these tools in performing their supervisory duties, and their commitment to developing their digital skills, which will help them adopt the digital educational supervision style.

**Third: The Importance of Digital Educational Supervision**

Emerging research highlights the positive impact of digital supervision on both teacher performance and the evolution of supervisory practices. Smith (2023) asserts that the strategic use of digital tools enhances the precision of instructional monitoring, facilitates data-informed decision-making, and cultivates a culture of continuous pedagogical improvement. When supervisors integrate technology effectively, they are better equipped to deliver timely and relevant instructional support that aligns with real-time classroom dynamics.

Fadl and Al-Amri's study (2022) showed that digital educational supervision saves time, money, and effort, contributes to building human relationships between teachers and supervisors, helps in preserving basic data about teachers and schools, and allows teachers to actively interact with educational supervisors, as the supervisor communicates his/ her message through graphics, sound, or images.

Ismail's study summed up the importance of digital educational supervision as follows (Ismail, 2018):

1. Enhancing the teaching and learning experience for teachers and supervisors by using digital technologies to exchange experiences and ideas and provide guidance.
2. Developing teachers' professional skills.
3. Overcoming geographical and social barriers.
4. Advancing strategies for digital instruction and assessment

**Fourth: The Benefits of Educational Supervision in the Digital Era**

Several studies indicate that educational supervision in the digital era achieves multiple educational, social, and economic benefits that contribute to enhancing the quality of the educational process. From an educational perspective, digital supervision provides access to advanced learning resources, promotes individualized student learning, enables teachers to receive continuous evaluations and professional development opportunities, and fosters greater interaction and innovation within the educational environment (Mulyanti, 2023). Socially, it contributes to offering diverse psychological and educational support, enhancing creativity and teamwork through technology, and encouraging broader community engagement (Robertson & Corrigan, 2018). Economically, digital educational supervision helps reduce training costs, increase operational efficiency, provides additional revenue-generating educational services, and strengthens the marketing and attractiveness of educational institutions to both students and teachers, thereby enhancing their public reputation and funding opportunities (McGinnis et al., 2023).

As noted by (Huang & Jin, 2020), digital supervision also promotes equity by ensuring that professional feedback and learning resources remain accessible regardless of geographic or temporal constraints. Additionally, it enhances transparency and accountability through the systematic documentation of teaching practices via video recordings, archived feedback, and lesson plan repositories. These digital archives support longitudinal performance evaluations and foster reflective teaching practices.

The benefits and advantages of digital educational supervision can be summarized as follows:

1. Facilitating virtual meetings and collaborative tools (Berente & Howison, 2019).
2. Activating online learning resources (Davis et al., 2018).
3. Implementing digital communication and network usage (Sklar, 2021).
4. Tracking and evaluating supervision goals (Rusdiana, 2024).
5. Keeping educational supervisors constantly updated with the latest developments (Hardy & Bobes, 2016).
6. Enhancing digital teaching skills (El-Din & Al Qurainiyah, 2024).
7. Providing technical and technological support (Kabariah & Adiyono, 2023).
8. Developing digital curricular plans (Sugianto, 2020).
9. Promoting digital assessment practices (Pesare et al., 2015).

Accordingly, the adoption of digital educational supervision represents a strategic step toward improving the quality of education in schools.

**Fifth: Skills required for Educational Supervisors in the Digital Era**

Given the rapid technological advancements and the increasing integration of digital technologies into education, it has become essential for educational supervisors to possess a set of skills and competencies in the digital era. A successful educational supervisor in the digital era must possess technical knowledge, leadership skills, and the ability to guide and innovate, and strive to enhance the use of technology in the field of education.

Some studies have indicated that the most important skills and competencies that educational supervisors must have in the digital era are as follows (Gimbert & Nolan, 2003, Kabariah & Adiyono, 2023, Pakpahan et al., 2021, Prasongmanee et al., 2021, Rasdiana et al., 2024; Spencer-Jones, 2010):

1. Technical knowledge: the educational supervisor must have extensive knowledge of the latest educational technology and available digital tools, and the ability to use them effectively, including educational programs, applications, and educational platforms.
2. Digital guidance and training: the educational supervisor must be able to guide and train teachers on how to integrate and use digital technologies in teaching and classroom management.
3. Digital analysis and evaluation: the educational supervisor must be able to analyze digital educational data and use it to make effective decisions to improve teachers' performance.
4. Adaptability: the educational supervisor must be able to adapt to rapid technological changes and be open to change, development, and innovations in the field of education.
5. Digital security and data protection: the educational supervisor must have knowledge of digital security and data protection policies.

6. Innovation and creativity in the use of technology: the educational supervisor in the digital age must be able to apply modern technological innovations in education to improve the learning process.
7. Digital interaction and fostering collaborative relationships among teachers, and the school community.
8. The ability to promote diversity and inclusion in the use of digital technologies in education.
9. Professional development and self-analysis: the educational supervisors must be committed to continuous professional development and self-analysis to improve their performance and skills in the field of digital technology.

Hence, it becomes clear that digital educational supervision requires diverse skills and competencies that include technical, analytical, educational, and leadership aspects.

**Sixth: Methods Employed by Educational Supervisors in the Digital Era**

The methods used by educational supervisors in the digital era include (Al-Shahri, 2024; Ismail, 2018; Satria & Mustiningsih, 2019):

1. **Electronic visits and virtual classroom observations**: Supervisors can conduct online visits to teachers and schools using various ICT tools such as computers and internet networks that provide remote support and assessment.
2. **Digital guidance**: Supervisors provide advice and guidance to teachers through digital platforms, email, voice chats, and videos or social media channels.
3. **Virtual training** through organizing online virtual workshops and engaging teachers in online educational activities: This helps exchange experiences and ideas and enables effective interaction between teachers, supervisors, and peers, with the aim of developing teachers' professional skills.
4. **Virtual meetings**: Conducting regular supervisory meetings using digital conferencing platforms.

Therefore, it can be said that educational supervisors in the digital era employ a variety of methods based on digital technology tools, allowing for greater flexibility, accessibility, and interaction between educational supervisors and teachers, thus enhancing the overall quality of supervision.

## The Current State of of Educational Supervision in Egypt in the Digital Era

Stemming from the vision of building a digital Egypt, technology has become the common denominator for developing the educational process in Egypt. In line with the state's drive toward digitization, it has intensified its efforts to implement numerous technological projects aimed at advancing the educational system. Accordingly, the predominant feature of the Egyptian state's reform and development strategy for the education and technical education sector has been the expansion of digital education and technological infrastructure. This expansion has mitigated the consequences of school closures and strengthened the government's ability to combat the COVID-19 pandemic (Egyptian Cabinet, 2022).

The Ministry of Education and Technical Education (MoETE) in Egypt has undertaken a number of qualitative efforts to integrate digital technologies into all aspects of the educational process.

Within the context of the strategic plan for pre-university education 2014-2030, some of the objectives of the educational technology program were: completing the necessary technological infrastructure to support the efficiency and effectiveness of the management and governance of the education system and support decision-making from the school level to the central administration; providing the necessary administrative and educational software and applications for all participants in the education system; training individuals in educational administrations at various levels on the use of information and communication technology in planning, monitoring, and information-based decision-making; and providing a guide for digital citizenship specific to the use of information and communication technology (Ministry of Education, 2014).

In the field of educational supervision, the technical guide (supervisor) is responsible for educational supervision in Egyptian schools. The Ministerial Decree No. (164) issued in 2016 identified the general description of the educational supervisor's job as being responsible for following up and evaluating everything related to his subject and the subsequent field visits to schools, evaluating the performance of teachers, evaluating their work plans, study plans, educational methods and examinations (Ministry of Education, 2016).

The Ministerial Decree No. (164) also identified a number of duties and responsibilities for the educational supervisor, the most important of which are (Ministry of Education, 2016):

1. Supervises a group of teachers according to the established rates.
2. Coordinates with school administration and education directorate to ensure sufficient numbers of teachers in the field of specialization and to provide necessary resources for the educational process.
3. Participates in evaluating teachers' performance through at least four visits.
4. Guides teachers to available professional development and learning resources.
5. Proposes improvement of the activities of the school's training and quality unit.
6. Monitors teachers' efforts, records, activities, and plans.
7. Contributes to identifying teachers' professional development needs.

Article (16) of the Executive Regulations of the Education Law issued by Prime Ministerial Decree No. 428 of 2012 identified the binding standards for the educational performance of technical guidance jobs in each of the following fields (Cabinet of Ministers, 2013):

1. Leadership Field:
    - Awareness and commitment to the future vision of education in Egypt.
    - Adopting a scientific approach as a method for managing educational change processes.
    - Employing the capabilities and characteristics of his/ her staff to achieve effective student learning.
    - Commitment to the ethics of the teaching profession.

2. Professional Development Field:
    - Activating professional development elements for himself, his colleagues, and teachers.
    - Supporting school training and evaluation units.
    - Support performance improvement activities.
3. Curriculum Development Field:
    - Use appropriate practical approaches to link the curriculum to the environment.
    - Participate with educational practitioners in designing and implementing plans for curriculum development.
4. Monitoring and Evaluation Field:
    - Participate in developing an effective monitoring and evaluation system.
    - Monitoring curriculum implementation and evaluating learning outcomes.
    - Participate in supporting school development plans.
5. Learning Community Field:
    - Seeking to diversify sources of knowledge and learning.
    - Investing in the creativity of educational practitioners.

The Ministerial Decree No. (164) also set a number of conditions for holding the job of educational supervisor, including completing the professional development programs that qualify for the position, as determined by the Professional Academy for Teachers, and obtaining a certificate of eligibility to practice guidance positions (Ministry of Education, 2016).

By reviewing the preceding official documents, it becomes clear that the Egyptian Ministry of Education and Technical Education (MoETE) is interested in expanding and integrating digital technology into all aspects of the educational process including educational supervision.

However, it can be noted that the identified responsibilities and tasks of educational supervisors in Egypt are mostly traditional and do not keep pace with the rapid technological changes of the digital era. These documents do not include any of the practices carried out by supervisors to integrate digital technology and its tools into the educational process, thus contributing to its improvement and development.

It is also evident that the binding standards for technical guidance jobs in Egypt lack the field of digital technology and its integration into the educational supervision process. Therefore, there is an urgent need to review and amend these standards so that educational supervisors can adapt to digital technology and employ its various tools in all their supervisory practices.

Moreover, the requirements identified by the official legislation for the educational supervisor job in Egypt do not include the availability of skills related to the use of digital technologies and their tools, which necessitates amending and developing these requirements in light of modern digital educational supervision systems.

In this context, the results of Ahmed's study (2021a) revealed that there are some obstacles facing traditional educational supervision in Egypt, among them:

- Many administrative burdens are placed on the educational supervisor, which requires more time and effort.
- Small number of educational supervisors compared to the number of teachers.
- Lack of places necessary to hold meetings and training programs in the school.

In the same context, the results of Abdulaziz's study (2017) revealed some of the obstacles facing the educational supervision system in Egypt, such as: administrative centralization, bureaucracy, poor material and technical capabilities that Egyptian schools suffer from, the lack of websites and electronic databases dedicated to serving the supervisory and educational process and the lack of technically qualified human cadres.

These aspects negatively impact the performance of educational supervisors and their supervisory practices, and consequently the progress of the educational process in Egyptian schools.

Accordingly, it becomes clear that there is a need to reconsider the current system of educational supervision in Egypt and adopt a new system that is compatible with the requirements of the digital era.

## Research Methodology and Procedures

**1**. The research employed the **descriptive survey method** as it's suitable for achieving the research aims. This was achieved through surveying the sample participants' views regarding the field of educational supervision in Egypt in the digital era..

### 2. Population and Sampling

The target population of the research included educational experts, subject advisors, supervisors, school principals, vice-principals, and teachers across various educational directorates in Egypt. A random sample of 377 was selected for the research.

### 3.The research tool

- After reviewing the literature and previous studies related to the current research topic, and in light of the data, questions and objectives of the research, a questionnaire was developed as a tool to explore the sample participants' views regarding the field of educational supervision in Egypt in the digital era. It consists of three axes. The first axis addresses the efforts of the Ministry of Education and Technical Education (MoETE) in the field of educational supervision in the digital era. The second axis addresses the obstacles related to its development, while the third axis addresses the mechanisms for its development. The questionnaire aims to explore the participants' views on these axes according to a three-point Likert scale (agree - somewhat - disagree).
- The questionnaire in its initial form was reviewed by a panel of educational experts to ensure the accuracy of its items and the soundness of their wording. Based on their feedback, some items were deleted from the initial form and others were modified.The percentage of agreement between the arbitrators reached [95%].

- The questionnaire in its final form consists of [26] items distributed over three axes. The first axis represents: the efforts and contributions of the Ministry of Education and Technical Education in the field of educational supervision in Egypt in the digital era, and it consists of [8] items starting from [1 to 8]. The second axis represents the obstacles to developing educational supervision in Egypt in the digital era, and it consists of [9] items starting from [9 to 17]. The third axis represents the mechanisms for developing educational supervision in Egypt in the digital era, and it consists of [9] items starting from [18 to 26].
- The field application of the questionnaire was conducted in the first semester of the academic year 2024/2025.

**4. Statistical methods used**

The research utilized a variety of statistical techniques, as follows:

- Cronbach's Alpha coefficient was calculated for the exploratory sample to examine reliability for each axis and the overall questionnaire. For the efforts axis, the Cronbach's alpha value was (.907), for the obstacles (.823), for the mechanisms (.852), and the total score (939.). Cronbach's alpha values were above 0.70, which reflect acceptable internal consistency.
- Pearson correlation coefficients were calculated for the exploratory sample to assess internal consistency reliability between the items and the total score of the axis to which they belong, as well as between the items and the total score of the questionnaire, and finally between the items and the total score of the questionnaire. All values were statistically significant at the 0.1 level, indicating that the questionnaire possesses a high degree of validity, reliability, and internal consistency. Calculating frequencies, percentages, and Chi-square values ($\chi^2$) to identify differences among participants' responses concerning their views on the three axes of the questionnaire, namely (efforts – obstacles - mechanisms for development) in the field of educational supervision.

## Results and Discussion

After calculating frequencies and percentages of participants' responses, the research used the Chi-square test ($\chi^2$) to identify differences among participants' responses concerning their views on the three axes of the questionnaire. The results will be presented as follows:

1. **Results related to the participants' responses regarding the efforts undertaken by the Ministry of Education and Technical Education in the field of educational supervision in the digital era. The results are presented in Table [1] below:**

**Table [1]**

***Frequencies, Percentages & Chi-square ($\chi^2$) Values of Participants' Responses regarding the efforts of the Ministry of Education in the Field of Educational Supervision in Egypt ( N=377)***

| | Items | Disagree | | To some extent | | Agree | | X2 | sig |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | | |
| 1 | Guiding teachers to integrate technology in developing students' life skills | 13 | 3.4 | 30 | 8.0 | 334 | 88.6 | 519.2 | .01 |
| 2 | Providing technical support for teachers in utilizing electronic communication | 8 | 2.1 | 36 | 9.5 | 333 | 88.3 | 512.2 | .01 |
| 3 | Enhancing teachers' skills in developing electronic assessments | 12 | 3.2 | 50 | 13.3 | 315 | 83.6 | 433.6 | .01 |
| 4 | Encouraging students to benefit from digital learning resources (educational platforms, satellite, channels, and the Knowledge Bank | 2 | .5 | 62 | 16.4 | 313 | 83.0 | 433.2 | .01 |
| 5 | Developing a strategic plan for the use of digital technologies in educational supervision | 24 | 6.4 | 50 | 13.3 | 303 | 80.4 | 378.1 | .01 |

| | Items | Disagree | | To some extent | | Agree | | X2 | sig |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | | |
| 6 | Collaborating with the Ministry of Communications to support the technological infrastructure for advancing educational supervision**.** | 12 | 3.2 | 66 | 17.5 | 299 | 79.3 | 370.2 | .01 |
| 7 | Training teachers in the use of modern technologies in teaching | 48 | 12.7 | 62 | 16.4 | 267 | 70.8 | 239.2 | .01 |
| 8 | Encouraging teachers to conduct educational research via the internet. | 30 | 8.0 | 92 | 24.4 | 255 | 67.6 | 214.9 | .01 |
| Total | | 19 | 4.9 | 56 | 14.9 | 302 | 80.2 | 387.6 | .01 |

The results presented in Table (1) reveal statistically significant differences among the participants' responses ("Agree" – "To some extent –" and "Disagree") in favor of those who selected "Agree". The percentage of participants who chose "Agree" reached 80.2%, while 14.9% selected "to some extent," and 4.9% selected "Disagree." This indicates that these efforts have already been achieved in the field of educational supervision in Egypt.

These findings are consistent with previous studies such as: (Al-Qasem, 2013), (Al-Al-Anzi, 2013), (Issa, 2019), (Hazaymeh, 2020), (Al-Shadifat, 2022), and (Al-Shammari & Al-Shar'an, 2022). Their results emphasized that the efforts and contributions of Ministries of Education should focus on the following: developing a strategic plan for integrating digital technologies into educational supervision, collaborating with the Ministry of Communications to enhance the technological infrastructure for advancing supervision practices, training teachers on the effective use of modern technologies in teaching, providing technical support for teachers in the use of digital communication, Building teachers' competencies in preparing electronic assessments, encouraging teachers to conduct educational research using online platforms, promoting students' utilization of digital learning resources (educational platforms, satellite TV channels, and the Egyptian Knowledge Bank), and guiding teachers to integrate technology in fostering students' life skills.

Furthermore, Table (1) highlights the importance of guiding teachers to use technology in developing students' life skills, as this item ranked first with a Chi-square ($\chi^2$) value of [519.2]. The second-ranked item was "enhancing teachers' skills in preparing electronic assessments," with a Chi-square value of [512.2]. The third-ranked item was "providing technical support for teachers in using electronic communication," with a Chi-square value of [433.6].

2. **Results related to the participants' responses concerning their views on the obstacles related to the field of educational supervision in Egypt in the digital era. The results are presented in Table [2] below:**

**Table (2)**

***Frequencies, Percentages & Chi-square ($\chi^2$) Values of Participants' Responses regarding the Obstacles related to the Field* of *Educational Supervision in Egypt (n = 377)***

| | Items | disagree | | To some extent | | Agree | | X2 | sig |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | | |
| 9 | Lack of financial resources allocated to educational supervision | 13 | 3.4 | 26 | 6.9 | 338 | 89.7 | 538.8 | .01 |
| 10 | Difficulty in implementing educational policies that support the use of technology in supervision | 18 | 4.8 | 24 | 6.4 | 335 | 88.9 | 523.2 | .01 |
| 11 | Lack of awareness among educational supervisors regarding the requirements of supervision in the digital age | 7 | 1.9 | 66 | 17.5 | 304 | 80.6 | 393.5 | .01 |
| 12 | Weak technological coordination and integration among schools,educational districts, and directorates | 17 | 4.5 | 58 | 15.4 | 302 | 80.1 | 377.8 | .01 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | Absence of references to technology use in the job description of educational supervisors | 10 | 2.7 | 72 | 19.1 | 295 | 78.2 | 357.6 | .01 |
| 14 | Inadequate academic preparation of educational supervisors on how to integrate digital technologies in supervision | 31 | 8.2 | 68 | 18.0 | 278 | 73.7 | 282.4 | .01 |
| 15 | Poor technological infrastructure in schools | 56 | 14.9 | 48 | 12.7 | 273 | 72.4 | 259.4 | .01 |
| 16 | Excessive workload placed on educational supervisors | 22 | 5.8 | 91 | 24.1 | 264 | 70.0 | 247.4 | .01 |
| 17 | Shortage of technically skilled human resources within schools | 54 | 14.3 | 56 | 14.9 | 267 | 70.8 | 238.4 | .01 |
| Total | | 25 | 6.7 | 57 | 15.1 | 295 | 78.3 | 357.6 | .01 |

The results presented in Table (2) reveal statistically significant differences among the participants' responses ("Agree" – "To some extent –" and "Disagree") in favor of those who selected "*Agree*". The percentage of participants who chose "Agree" was 78.3%, compared to 15.1% who chose "to some extent," and 6.7% who selected "Disagree." This confirms the existence of these obstacles in the field of educational supervision in Egypt.

These findings are consistent with prior research, including studies by (Al-Balawi, 2012), (Abu Al-Ela, 2017), (Abdulaziz, 2017), (Al-Kindi, 2018), (Al-Arfaj et al., 2019), (Selem, 2021), (Nour, 2021), (Al-Daajani, 2022), and (Al-Hiti, 2023). These studies highlighted the major challenges to educational supervision in the digital age, such as: poor technological infrastructure in schools, lack of financial resources allocated to educational

supervision, shortage of technically skilled human resources in schools, excessive workload assigned to educational supervisors, limited knowledge of supervisors regarding the requirements of digital-era supervision, inadequate academic preparation of supervisors on integrating digital technologies in supervision, weak technological coordination and integration among schools, districts, and directorates, difficulty in implementing educational policies that support technology use in supervision, and absence of technology-related duties in the job descriptions of educational supervisors.

Additionally, Table (2) shows that the most prominent obstacle was the lack of financial resources allocated to educational supervision, which ranked first with a Chi-square ($\chi^2$) value of [538.8.]. The second-ranked obstacle was the difficulty in implementing educational policies that support technology use in supervision, with a Chi-square value of [523.2]. The third-ranked obstacle was the lack of awareness among supervisors about the requirements of educational supervision in the digital era, with a Chi-square value of [393.5].

3. **Results related to the participants' responses concerning their views on the mechanisms for developing educational supervision in Egypt in the digital era. The results are presented in Table (3) below:**

**Table (3)**

***Frequencies, Percentages & Chi-square ($\chi^2$) Values of Participants' Responses Regarding the Mechanisms for Developing Educational Supervision in Egypt in the Digital era (N= 377)***

| | Items | disagree | | To some extent | | Agree | | X2 | sig |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | | |
| 18 | Enhancing the technological infrastructure in schools | 14 | 3.7 | 47 | 12.5 | 316 | 83.8 | 436.7 | .01 |
| 19 | Providing financial resources and increasing the budget allocated to educational supervision | 6 | 1.6 | 75 | 19.9 | 296 | 78.5 | 365.3 | .01 |
| 20 | Supplying schools with technically trained personnel capable of employing technology in educational supervision | 13 | 3.4 | 64 | 17.0 | 300 | 79.6 | 373.1 | .01 |
| 21 | Reducing the workload assigned to educational supervisors | 9 | 2.4 | 37 | 9.8 | 331 | 87.8 | 506.4 | .01 |

| | Items | disagree | | To some extent | | Agree | | X2 | sig |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | | |
| 22 | Developing educational supervisors' technological skills prior to assuming their roles | 11 | 2.9 | 38 | 10.1 | 328 | 87.0 | 491.6 | .01 |
| 23 | Equipping schools with the latest software related to educational supervision | 19 | 5.0 | 76 | 20.2 | 282 | 74.8 | 304.7 | .01 |
| 24 | Improving technological coordination and integration among schools, districts, and educational directorates | 22 | 5.8 | 101 | 26.8 | 254 | 67.4 | 221.4 | .01 |
| 25 | Facilitating the implementation of laws, regulations, and educational policies that support the use of technology in educational supervision | 12 | 3.2 | 54 | 14.3 | 311 | 82.5 | 417.1 | .01 |
| 26 | Including the use of modern technologies in educational supervision within supervisors' job descriptions | 31 | 8.2 | 92 | 24.4 | 254 | 67.4 | 211.4 | .01 |
| Total | | 15 | 1.7 | 65 | 17.2 | 297 | 78.8 | 381.1 | .01 |

The results presented in Table (3) reveal statistically significant differences among the participants'responses ("Agree" – "To some extent" – "Disagree") in favor of those who chose "*Agree*." This indicates the importance of these mechanisms for developing educational supervision in Egypt in the digital era. Specifically, 78.8% of respondents selected "Agree," 17.2% selected "To some extent," and only 1.7% selected "Disagree."

These findings are consistent with previous studies such as (Al-Khaldi, 2017), (Omar, 2020), (Nour, 2021), (Ahmed, 2021), (Al-Shahri, 2022), (Fadl & Al-Amri, 2022), (Tayeh, 2022),

(Al-Amoud, 2022), (Bani Younes, 2024), and (Al-Otaibi et al., 2024). The results of these studies emphasized the essential mechanisms needed to advance educational supervision in the digital era. These mechanisms include: enhancing the technological infrastructure in schools; providing financial resources and increasing the budget allocated for educational supervision; equipping schools with technically trained personnel capable of integrating technology into supervisory practices; reducing supervisors' workload; developing supervisors' technological skills prior to employment; supplying schools with the latest educational supervision software; improving technological coordination among schools, districts, and directorates; facilitating the implementation of supportive legislation and educational policies; and including the use of modern technologies in supervisors' job descriptions.

Furthermore, the findings shown in Table (3) reveal that strengthening the technological infrastructure in schools is perceived as the most critical mechanism for advancing educational supervision in Egypt in the digital era, ranking first with a chi-square value of [$\chi^2$ =436.7]. This is followed by the necessity of providing financial resources and increasing the supervision budget, which ranked second [$\chi^2$ =365.3]. The third most important mechanism identified is the need to supply schools with trained technical personnel to integrate technology into educational supervision, with a chi-square value of [$\chi^2$ =373.1].

## Proposed Perspective for Developing Digital Educational Supervision in Egypt in the Digital Era

In light of the theoretical framework, the literature review, and the results of the field study, the current research can provide the following proposed perspective for implementing educational supervision in Egypt in the digital era, which includes several key dimensions: the foundations, aims, components, requirements, responsible entities for its implementation, obstacles to its execution, and mechanisms to overcome these obstacles. In the next section, each dimension will be presented separately.

### First Dimension: The Intellectual Foundations of the Proposed Perspective

The proposed perspective for educational supervision in the digital era is based on a set of intellectual foundations that emphasize the importance of integrating technology as an essential part of the educational and supervision processes. Technology contributes to improving the quality of education and enhancing learning experiences. This includes providing interactive and safe environments that support effective communication among various educational stakeholders, encouraging innovation and renewal in supervision practices, as well as supporting continuous learning and professional development for supervisors enhancing their capabilities and skills in in the field of educational technology. Digital supervision also relies on comprehensive and continuous evaluation using technological tools and enhances the concepts of transparency and accountability through performance documentation and clear reporting, with a focus on proactive thinking and adapting to the continuous changes in education and technology.

**Second Dimension: Aims of the Proposed Perspective**

The proposed perspective aims to enhance digital educational supervision and improve the quality of education in Egyptian schools by:

1. Utilizing technology, tools, and digital techniques to improve the learning experience and achieve better outcomes for students and teachers.
2. Developing distance learning, providing advanced evaluation techniques, and enhancing interaction and transparency among all members of the school community.
3. Promoting communication and collaboration among all concerned parties.
4. Enhancing educational quality and supporting digital transformation in Egyptian schools through the implementation of digital educational supervision across all aspects of the educational process.
5. Supporting supervisors and developing their skills, as well as providing support to schools in various areas to ensure maximum benefit from digital transformation in education.
6. Expanding the concept of continuous learning and encouraging supervisors and teachers to engage in continuous interaction, learning, and innovation in a stimulating and diverse educational environment.
7. Providing technical and technological support through building effective partnerships with the local community and increasing awareness of the importance of digital education in society.

**Third Dimension: Components of the Proposed Perspective**

The proposed perspective for developing educational supervision in the digital era includes three main components: technological, human, and organizational. The technological component focuses on strengthening the technological infrastructure of schools, providing communication devices and educational software that support digital supervision processes. The human component focuses on training educational supervisors and providing specialized teams for training and technical support to ensure the effective use of technology. The organizational component emphasizes the need to update regulations and laws, establish clear technological policies, and provide administrative support and necessary resources within schools to facilitate the implementation of digital educational supervision and achieve its goals efficiently.

**Fourth Dimension: Requirements for Implementing the Proposed Perspective**

The implementation of the proposed perspective for developing educational supervision in the digital era requires several *material requirements*, including enhancing the technological infrastructure in schools by providing smart devices and appropriate software, providing modern communication tools and emerging technologies such as artificial intelligence and virtual reality, as well as continuous training for supervisors and teachers, technical support, and clear technological policies. This also includes raising awareness within the educational community about digital security, providing digital interactive libraries

and platforms that contribute to enhancing active learning, and providing tools that encourage family involvement in monitoring student progress. *The human requirements* include providing qualified personnel, such as educational supervisors specialized in educational technology, innovative teachers, curriculum and evaluation experts, as well as teams for technical support and professional training, and administrators who provide necessary support and resources. Self-directed and collaborative learning is also encouraged through online educational communities. Cloud computing is used to organize content and facilitate collaboration. It also supports the creation of joint projects between schools, promoting the exchange of experiences and the integration of new technologies in classrooms through workshops and innovative educational competitions.

**Fifth Dimension: Entities Contributing to Implementing the Proposed Perspective**

The successful implementation of the proposed perspective for developing digital educational supervision requires cooperation and integration between several entities to ensure its success and achievement of its objectives. *The Ministry of Education and Technical Education (MoETE)* plays a central role in setting policies, providing resources, and offering technical support. Meanwhile *schools* serve as the primary setting for implementing these policies by providing the appropriate infrastructure. *Educational supervisors* play a key role in implementing digital supervision strategies, while *teachers and staff* contribute to activating these strategies by developing their technological skills. *Parents and the local community* are active partners in supporting this transformation through participation and encouragement. *Universities and research centers* contribute to enhancing this approach through specialized studies and research. *Technology companies* and educational solution providers supply the necessary tools and technologies, along with technical support to ensure the effective and sustainable implementation of digital educational supervision.

**Sixth Dimension: Obstacles to Implementing the Proposed Perspective**

The proposed perspective faces several obstacles that may limit its success. Overcoming these obstacles requires creative thinking, innovative solutions, continuous collaboration, and strong commitment among all stakeholders, including educational institutions, policymakers, teachers, supervisors, and parents, working together to achieve digital transformation in educational supervision. Some of the key obstacles include:

1. Weak technological infrastructure: A lack of devices, networks, and software is a major barrier to effectively implementing digital supervision.
2. Insufficient training and professional development: The lack of adequate training for supervisors and teachers reduces their ability to use technology effectively.
3. Resistance to change: Some individuals within educational institutions resist the shift from traditional to digital methods.
4. Lack of administrative support: The absence of support from school administration or higher authorities reduces the chances of a well-organized digital transformation.
5. Lack of awareness and strategic guidance: A failure to recognize the importance of digital supervision and a lack of planning weakens implementation efforts.

6. Technological culture gap: Differences in technological proficiency among individuals lead to gaps in interaction and application.
7. Time constraints: The daily workload of supervisors and teachers hinders their ability to learn and apply new technologies.
8. Privacy and security concerns: Worries about data breaches or misuse slow the adoption of digital solutions.
9. Economic and financial challenges: A lack of public funding within institutions limits investment in digital infrastructure.

**Seventh Dimension: Mechanisms for Overcoming Obstacles**

Obstacles to implementing the proposed perspective can be overcome through the following mechanisms:

1. Supporting the technological infrastructure in schools.
2. Providing material resources and increasing the budget allocated for educational supervision.
3. Supplying schools with trained human resources to employ technology in educational supervision.
4. Reducing the administrative burdens on educational supervisors.
5. Developing technological skills for educational supervisors before taking on the role.
6. Supplying schools with the latest software related to educational supervision.
7. Coordinating and linking technology between schools, administrations, and directorates.
8. Facilitating the application of laws, regulations, and educational policies supporting the use of technology in educational supervision.
9. Including the use of modern technologies in the job description of educational supervisors.

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